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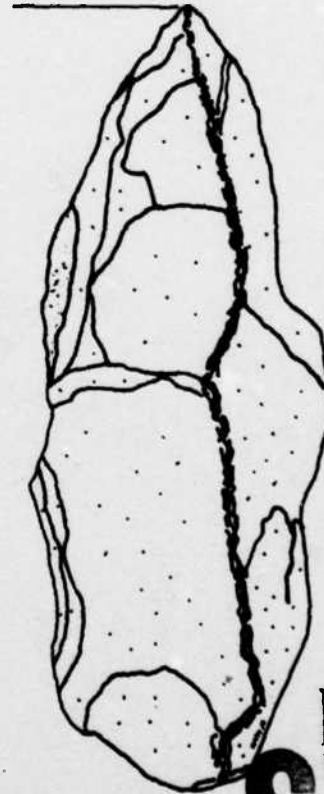
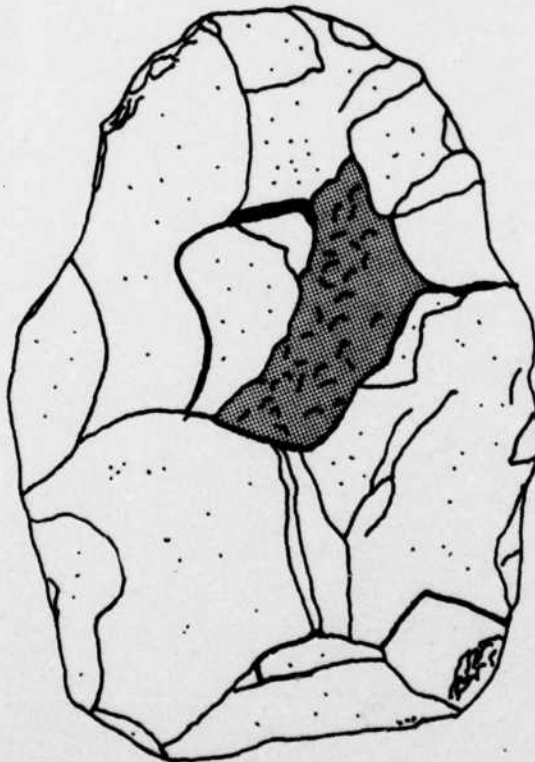
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Wichita State University

**The Gorge of the Missouri:
An Archeological Survey of
Lewis and Clark Lake,
Nebraska and South Dakota
Volume I**

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THE GORGE OF THE MISSOURI: AN ARCHEOLOGICAL SURVEY OF
LEWIS AND CLARK LAKE, NEBRASKA AND SOUTH DAKOTA

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1983

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report presents the results of a shoreline survey of Lewis and Clark Lake, Nebraska and South Dakota. The survey, performed by crews from Wichita State University and the University of Iowa, is the first to provide complete coverage of the shoreline of this lake. The report includes studies of the history of the area, including sections on the Yankton, Ponca, and Santee tribes, and a section on the Bon Homme Hutterite Colony. Interviews with Native Americans living near the lake are also reported.		

20. Abstract (continued)

The survey relocated most of the previously reported sites in the area and discovered 44 more. Of these, 18 are in Nebraska, and 26 in South Dakota. For each site, the report includes a general description, an analysis of the artifacts collected, an assessment of any impact to the site, and recommendations for testing. The sites discovered appear to cover the full range of the prehistory of the region from Paleo-Indian (one probable site) through Archaic, Woodland, Great Oasis, St. Helena, Middle Missouri Tradition (several possible sites), historic Native American (including at least one reservation allotment house), and historic Euro-American.

A brief catchment analysis is provided for several sites, and the appropriateness of this technique to shoreline surveys is discussed. The documented channel changes in the Missouri River are used to assess the likelihood that any prehistoric sites have survived in the surviving lowland areas.

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I.

INTRODUCTION

This report presents the information gathered during a shore-line survey of Lewis and Clark Lake in the summer of 1982. The survey was performed under the provisions of Contract DACW45-82-C-0098 between the U. S. Army Corps of Engineers, Omaha District, and Wichita State University. Dr. Donald J. Blakeslee, Wichita State University, and Dr. John O'Shea, then of the University of Iowa, were co-principal investigators.

Cultural resource surveys of the type reported here are mandated by federal laws (the National Historic Preservation Act of 1966, the Reservoir Salvage Act of 1960, the National Environmental Policy Act of 1969), and various executive orders and regulations (33CFR 305; 36CFR, Ch.8, 800; 36CFR 600; 36CFR 60; 36CFR 63; Executive Order 11593). These provide for the discovery, assessment, and, where necessary, mitigation or protection of cultural resources such as sites, buildings, districts, structures, and other items significant in history, architecture, archeology, or culture. The Scope of Work of the contract is given in Appendix II.

The personnel for the project included Dr. Donald J. Blakeslee (Wichita State University) and Dr. John O'Shea (University of Iowa), co-principal investigators; Alex Barker (Wichita State University) and James Sartain (University of Iowa), crew chiefs; Weldon Padgett, Glenn Unruh, Ben Urish, and Hector Garcia (Wichita State University),

Mark Hill and Becky Miller (University of Iowa), crew members; Marilyn Rose (University of Iowa), Hutterite historian; Royce D. Kurtz (University of Iowa), ethnohistory and historical documents; Judith Malone (Wichita State University), historical archeologist; Wanda Sanborn (Wichita State University) was administrative assistant for the project and assembled and typed this report. Mark Hill (now of Wichita State University), directed the laboratory analysis. Dr. William Unrau (Wichita State University) assisted in the design of the historic research. Sandra Laney (University of Nebraska) performed the analysis of aerial photos. Edward Brodnicki, of the U.S. Corps of Engineers, Omaha District, was the contract officer for the project. Weldon M. Padgett was responsible for the technical illustrations.

II.

REGIONAL LOCATION AND ENVIRONMENT

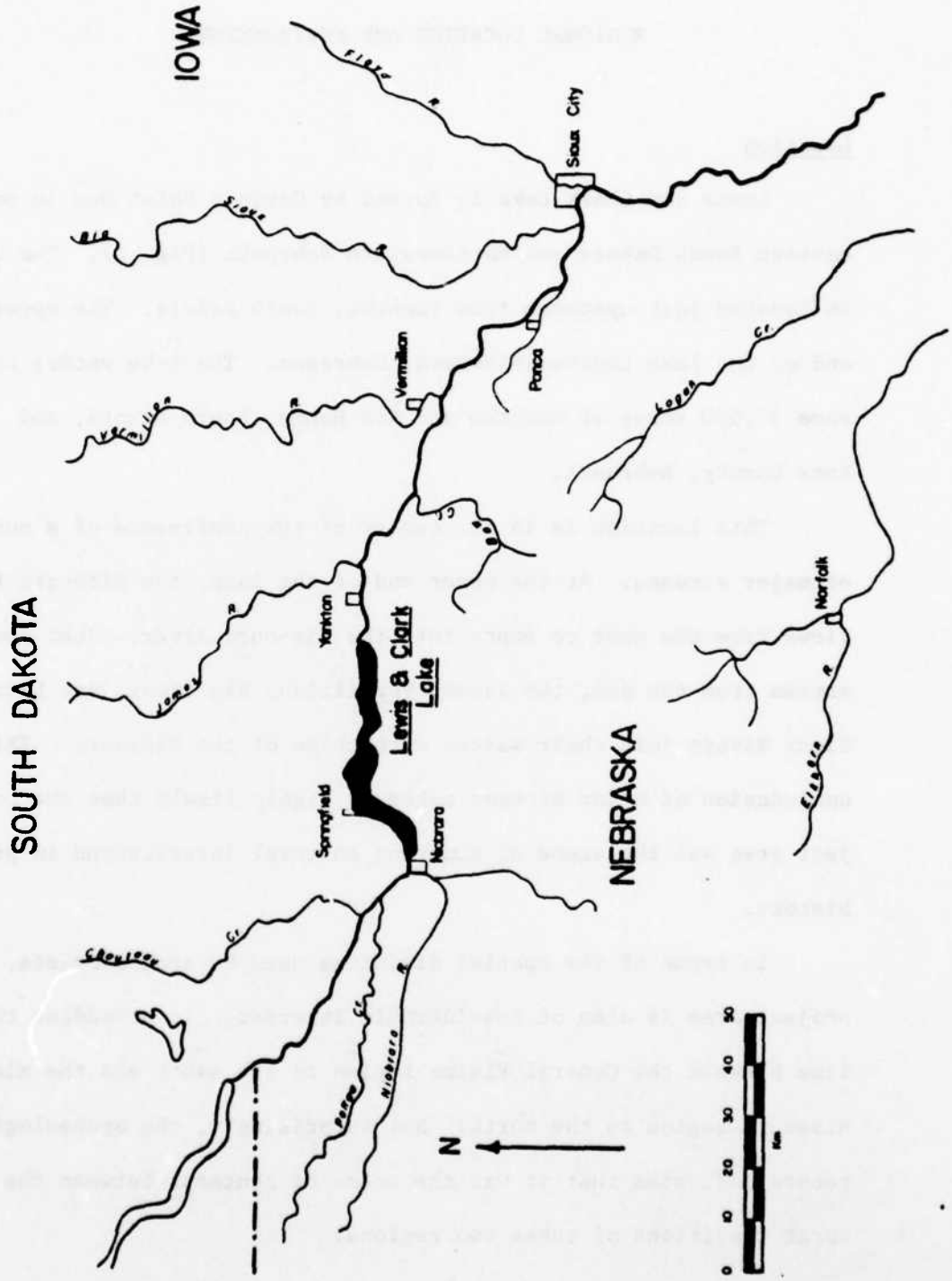
Location

Lewis and Clark Lake is formed by Gavin's Point Dam in southeastern South Dakota and northeastern Nebraska (Fig. 1). The dam is located just upstream from Yankton, South Dakota. The upper end of the lake touches Niobrara, Nebraska. The lake waters cover some 33,000 acres of Yankton and Bon Homme, South Dakota, and Knox County, Nebraska.

This location is in the center of the confluence of a number of major streams. At the upper end of the lake, the Niobrara River flows from the west to empty into the Missouri River. Just downstream from the dam, the James, Vermillion, Big Sioux, and Little Sioux Rivers join their waters with those of the Missouri. This conjunction of major streams makes it highly likely that the project area was the scene of numerous cultural interactions in prehistory.

In terms of the spatial divisions used by archeologists, the project area is also of considerable interest. It straddles the line between the Central Plains region to the south and the Middle Missouri region to the north. Not surprisingly, the archeological record indicates that it was the scene of contacts between the cultural traditions of these two regions.

MAP 1: LOCATION OF LEWIS AND CLARK LAKE



Topography

The lake is located in a unique feature of the Missouri River valley, a canyon known as the "Gorge of the Missouri" (Rothrock 1943). This is an extremely deep and narrow section of the stream valley. Upstream from Gavin's Point, the river has carved a trench 200 feet deep and only about $1\frac{1}{2}$ miles wide. Downstream, the valley is far wider and the relief is far less pronounced. At Vermillion, the valley is four miles wide, with a low alluvial plain bordering it on the north.

The borders of the Gorge of the Missouri are steep, highly dissected bluffs--the Missouri River breaks. Tributary valleys of varying size interrupt the valley walls at regular intervals. Some are no more than narrow ravines. Others are permanent streams which sport prominent terraces near their mouths. All of the streams flow between fairly deep cut banks, and many prehistoric sites are exposed in these. The creation of the lake has caused the formation of many more miles of cut banks as wave action has eroded the shoreline. Many of these cut banks also have exposed archeological materials.

On the South Dakota side, there is an extensive terrace just above the dam and the slopes of the bluffs. Highly dissected bluffs gradually approach the river as one moves upstream, meeting the shoreline at Gavin's Point. Upstream from this spot, the shoreline is extremely rugged for a distance of eight miles. At this point, the shoreline becomes low and flat until the the town of Springfield,

above which the terrain becomes progressively more rugged as the upper end of the reservoir is approached.

The Nebraska side is more rugged still. The southern end of the dam is anchored against Calumet bluff, which towers several hundred feet above the lake waters. The first break in the bluffs occurs at the mouth of Weigand Creek, where there is a terrace remnant a mile long. The bluffs then border the lake again, with the extremely rugged Devils Nest area occurring opposite the Bon Homme Hutterite Colony. The next break is at the Santee reservation where another large terrace remnant occurs. There is a break one quarter of a mile wide at the mouth of Bazile Creek. Above this, there is a very large section of lowland stretching to the mouth of the Niobrara River.

The upper end of the reservoir is marked by large extents of newly accreted lowland. Some of this has accumulated since the reservoir was formed, while the rest is somewhat older than the reservoir, but geologically very recent. It represents portions of the Missouri River floodplain which were not submerged by the waters of the reservoir. The extent of these lowlands is much exaggerated on the U.S.G.S. topographic maps. This apparently is the result of the use of aerial photogrammetry. A large proportion of the lowlands shown on the maps are actually nothing more than dense stands of cattails in shallow water. These appear to be dry land on aerial photographs, with an apparent elevation of three to four feet above the level of the lake.

Geologic History

The bedrock that is exposed in the vicinity of Lewis and Clark Lake represents a series of Late Cretaceous marine sediments. These include the Dakota sandstone, Graneros shale, Greenhorn limestone, Carlisle shale, and Niobrara chalk. These are covered in part by a complex series of Pleistocene glacial deposits. The Nebraskan, Kansan, Illinoian, and Wisconsin glaciations all affected the local topography. Each of the glacial developments brought tills into the area and disrupted streams which sometimes cut back into their old courses as the glaciers retreated and sometimes carved new ones.

The most prominent glacial feature of the landscape is the Gorge of the Missouri itself. This formed along the margin of the late Wisconsin ice sheet which blocked previously east-flowing streams and diverted their waters southward. These waters eroded first through older till deposits and then into bedrock itself (Reed et al. 1965).

As the Wisconsin glaciation retreated, an increasingly wide outwash plain was exposed to the fierce periglacial winds. These redeposited enormous amounts of dust as loess on the uplands adjacent to the trench. Still later, tributary streams developed which cut through the loess and till, creating the highly dissected landscape seen today. Finally, a series of terrace deposits developed in the valleys of the larger of these streams. The last major episode of terrace building, as indicated by the ages of archeological materials found during this survey, ended approximately 1,000

years ago.

Economic Geology

The Lewis and Clark Lake vicinity contains a variety of materials of interest to the prehistoric and historic inhabitants. Dakota sandstone is exposed along the Missouri River, a few miles downstream from Gavin's Point Dam. This material was widely used by Native Americans to make a variety of abrading tools. Some have been found in shoreline sites.

North of the reservoir are found outcrops of "Bijou Hills quartzite," a silicified sediment of Tertiary age. This is a gray to pale green material which was used for a variety of tools, but especially for choppers. It is extremely resilient, and bifaces made from it retain a usable edge even when used for chopping through bison bone. Although one source (Simpson 1960: 43) appears to describe an outcrop of this material west of Gavin's Point, we failed to locate any local deposits. Furthermore, local informants knew of none.

A third lithic source of some importance to the prehistoric residents of the region is a yellow to brown jasper which occurs in the Smoky Hill member of the Niobrara chalk. Quarries of this material are known from as far away as Kansas, and the material was used in very large amounts by some prehistoric peoples. Some of this jasper is found in local sites, and since the local pieces are of lower quality than those found in southern Nebraska and Kansas,

it is likely that they derive from a local source. Nonetheless, we observed no outcrops of the jasper in the survey area.

The Niobrara chalk itself was used by both prehistoric and historic peoples. Historically, it was used occasionally as a building material. Some of the structures in the Bon Homme Hutterite Colony are of Niobrara chalk, as was one abandoned building on government property. The Ponca mined small amounts of ochre (properly, goethite) for use as paint; Howard and Gant (1966: 27) visited the spot where this was done. It lies a short distance outside the project area near Niobrara.

Pleistocene and Recent deposits also provided valuable materials. Sioux quartzite, a pink to maroon material of Precambrian age, is common in the glacial drift. This was used for hammerstones, grinding stones, and mauls by Native Americans. It is sometimes crushed for gravel today. Granite is another constituent of the till used for a variety of purposes by prehistoric groups. Most notably, all but a few of the prehistoric ceramic wares were tempered with crushed granite.

Of recent origin is a material sometimes called "scoria." It is a type of clinker formed when seams of coal burned, heating the adjacent shales to the point that they bloated. Scoria abrading tools are common in prehistoric sites adjacent to the river.

Flora

Several types of sources can be used to document the flora

of the project area at the beginning of the historic period. One set of sources are the accounts of early visitors to the region such as Lewis and Clark. Notations on early maps are also of value. A second set of sources consists of modern ecological studies which allow some understanding of the area in prehistoric times.

Lewis and Clark Lake lies in a region where the rich forests of the lower Missouri give way to the species-poor gallery forest typical of the Great Plains. The lowland forest is not continuous in this region, but is restricted to older portions of the floodplain. The river meandered quite actively in this region, creating fresh soil which was then colonized by a succession of species. According to Lawrey et al. (1973), the succession can be characterized by five stages beginning with cattails and ending with an elm-ash-hackberry climax community. The latter appears to have been particularly rare because the meandering river usually cut back through developing stands of trees before the climax community could develop. In the Lewis and Clark journals, there are only two mentions of such forest communities, one at the mouth of the James River and one at the mouth of the Niobrara River. There, red cedar, honey locust, oak, arrow wood (red willow?), elm, and Kentucky coffee tree were noted (Ordway 1916: 118, 125). Other references are less specific: Plum Creek (Emanuel Creek) was presumably so named for the fruit trees it supported; and there are brief references to stands of timber in the hollows along the bluffs.

More specific information about the locations of trees

is available from the Warren map of 1855 and the General Land Office surveys of 1858 and 1860. These have two drawbacks, however. One is the fact that the steamboat traffic along the river, which had been in operation for several decades before these maps were drawn, must have reduced the timber resources somewhat. The GLO maps locate "Lober's Woodyard" at Devils Nest, "Hughes Woodyard" five miles below the Bon Homme Hutterite Colony, "Kountz Wood Yard" opposite the colony, and "Dodson's Wood Yard" four miles above the colony. The development of Frankfort, Tepeota, Bon Homme, Running Water, Niobrara, and the Santee Agency must also have depleted the timber resources of the area.

The other drawback of the maps in terms of floral resources is that they record what was present at specific times, but not previously. The Missouri River meandered actively in this region, and even the GLO maps for Nebraska and South Dakota, made in 1858 and 1860, show some movement of the channel in just a two-year period. Given the rapid movement of the channel, which destroyed some floral communities and created the opportunity for others, the situation shown on the maps cannot be projected back into the past except in a very general way. This is where consideration of the vegetative succession described by Lawrey et al. (1973) is of value. It tells us what sorts of vegetative communities would have existed in the area, even though there is no source of information which will tell us where they would have been at any point in time.

In the uplands and on portions of the floodplain, grassland

communities were found. These are representative of facies of the tallgrass prairie association (Carpenter 1940: 621-648). The composition of these grasslands varies with their location in the landscape. The uplands and higher terraces are characterized by an Andropogon-Panicum-Sorghastrum association, while the floodplain supported patches of Phalaris-Spartina prairie (Kaul n.d.).

Fauna

Early accounts make casual mention of some of the fauna of the study area. Lewis and Clark, for instance, make mention of elk, beaver, catfish, deer, geese, turkey, and duck along this section of the river. They were most deeply impressed with the enormous swarms of mosquitoes, however. White Bear Cliff, a local landmark that they mention, indicates the presence of grizzly bears in the locality. Just upstream from the project area, they encountered their first prairie dogs and their first very large herds of bison. In 1804, then, the Lewis and Clark Lake area appears to have lain at the eastern edge of the main distribution of these typical Great Plains species.

Carpenter (1940: 639) lists the following large game for the tallgrass prairie: bison, wapiti, white-tail deer, mule deer, and pronghorn. Smaller creatures such as migratory birds, rabbits, squirrels, and prairie dogs may also have been important in prehistoric subsistence systems. The local streams would have provided a variety of fish and shell fish as well. Reptiles and amphibians

are occasionally represented in archeological deposits in the region, but they hardly could have been an important food resource.

Climate

The region around Lewis and Clark Lake experiences a continental climate. That is, it has cold, dry winters and hot, fairly humid summers. Carpenter (1940: Figure 2) provides a convenient summary of the long-term data supplied by the weather station at Yankton, South Dakota. This climogram shows the winter months to be cold (average maximum temperatures below 22° F.) and dry (average monthly precipitation below one inch). The spring and summer seasons are warm (temperatures rise from 62° F. in April to 75° F. in June) and wet (monthly precipitation around three inches until August).

As important as the monthly and annual averages is the variance around these means. According to Carpenter's data, the variance in precipitation is far greater than that in temperature. Year to year fluctuations in precipitation resulted in considerable variation in food resources, a fact of life to which prehistoric and recent populations have always faced in this region (cf. Blakeslee 1975). The occasional late frost in the spring and early frost in the fall also affected food supplies.

Over the longer run, shifts in both temperature and precipitation have occurred, but our knowledge of them, of their effects on the local flora and fauna, and of any human adaptations to them, are far from sufficient. Bryson and his colleagues have proposed

a series of climatic episodes for the last 10,000 years (cf. Ludwickson et al. 1981: 22-25 for a brief discussion). These have been used by archeologists to interpret the culture history of the region (e.g., Lehmer 1970).

These interpretations can and should be criticised on various grounds. First, the data used to establish the climatic sequence can be interpreted in ways that do not imply climatic shifts (Blakeslee 1983). Moreover, the apparent relationship between climatic shifts and culture changes is probably spurious (Blakeslee 1983).

Another point is equally devastating to the climatic model. Given the variance around the mean for precipitation, it is possible to calculate how many years of accurate records that it would take to demonstrate, say, a 5% change in the mean. Nield (1978: 136) has calculated that it would take 125 years to demonstrate such a change at North Platte, Nebraska. At Yankton, the required time would be somewhat less, but the time to determine the same shift in June precipitation would be higher since the coefficient of variation is higher for the monthly means than for the annual. Since portions of the climatic model deal directly with June precipitation, this is critical. Thus to determine both the beginning and the end of a minor shift in summer precipitation at Yankton would take on the order of 250 years of direct observation. Since some of the climatic episodes postulated by Bryson last for only 300 years, it is difficult to believe in them without a leap of faith.

Finally, the archeological record is such that archeologists

have not been able to test this model. As Caldwell (1978: 133) has observed, "we have created an edifice of assumption and hypothesis, and no more." In fact, archeologists lack the chronological control over when various cultural manifestations began and ended that would be required to test whether or not these represent responses to dated climatic changes.

III.

ARCHEOLOGICAL OVERVIEW

The purpose of this section is to provide the reader with an introduction to what is known of the archeology of the region that encompasses Lewis and Clark Lake. This forms the basis for the interpretation of sites found during the survey and for the assessment of their importance. The discussion presented here is brief; a more extended treatment (written one year ago) may be found in Ludwickson et al. (1981: 106-178).

The earliest archeological remains recognized in the region are usually labelled Paleo-Indian. The time period covered by this label extends from before 11,000 years ago to approximately 7,500 years ago. The earliest clearly defined complex of this period is the Llano complex, although a great many archeologists believe that earlier complexes will be found eventually. Llano and the cultural complexes descended from it are defined more clearly on the Northwestern Plains (e.g., Frison 1978). These Paleo-Indian complexes are defined primarily in terms of a series of diagnostic spear or dart points. There is a trend toward the end of the period towards greater use of grinding stones and increased evidence for the use of a wide range of foodstuffs. Most early Paleo-Indian sites, by contrast, yield evidence for hunting a limited number of large game animals.

Judging from the Paleo-Indian sites found elsewhere on the Plains, any Paleo-Indian sites along the Lewis and Clark Lake

shoreline can be expected to be either short-term camps or kill sites of varying size. Bones of extinct forms of animals, diagnostic projectile points, knives, and burins might be expected.

No Paleo-Indian sites were found by any previous survey of the Lewis and Clark area. A visit to the Missouri National Recreation River area (Ludwickson et al. 1981: 179-181) led to the report of bones of a large extinct animal and of the existence of several playa lakes which have some potential for yielding Paleo-Indian remains. These, however, lie outside government property. The only site in this survey which showed any potential for yielding Paleo-Indian remains is 39YK40. Even in this instance, no diagnostic materials were recovered; the age estimate is made solely on the basis of deep burial of the earliest component.

The Archaic period extends from approximately 8500 B.P. to 2000 B.P. This long episode included a period of generally warmer and drier climate known as Altithermal. Although there is some controversy about the effects that the Altithermal may have had on human societies on the Plains (Reeves 1973), this episode is generally regarded as one of low population densities. Reliance on a very wide range of small animals and increased dependence on vegetable foods may also reflect climate change (e.g., Kay 1982).

Archaic sites on the Plains consist primarily of a few cemeteries, small campsites, and kill sites of varying size until late in the period when more permanent habitations are known for the eastern Plains border. Diagnostic items include lanceolate, large side-notched and expanding stem projectile points. Ground stone tools

such as grooved axes and celts are occasionally found in late sites.

Previous surveys of Lewis and Clark Lake resulted in reports of only two Archaic period sites, and one of these reports is in error. A brief mention of 25KX15 in Howard and Gant (1966: 7) identifies the site as of Archaic age on the basis of some projectile points found there. This seems to be word-of-mouth information, and it is inaccurate. The site is of Woodland age and no trace of an Archaic component was found. The Tramp Deep Site, 25KX204, was excavated by Howard and Gant (1966: 16-23), and a deeply buried Archaic component was sampled. Our survey yielded only three additional sites--25KX203, 39B051, and 39YK40--which are likely to contain Archaic period components, but in no case is the identification absolutely certain.

The Early Ceramic period, ca. A.D. 1 - 900, is marked by the presence of various cultures that are termed Woodland or Plains Woodland. Identifiably Woodland materials on the eastern Plains do not appear until approximately the time of Christ. Reportedly, Early Woodland remains have been identified by comparison with the Black Sand materials of Illinois, which are now viewed as primarily of Middle Woodland, not Late Woodland age (Stoltman, personal communication). Thus, the Fox Lake phase is probably also primarily of Middle Woodland age (not Early Woodland as per Ludwickson et al. 1981: 116-121).

In the eastern Plains, north of the Kansas border, artifacts typical of the Hopewellian Interaction Sphere are absent from the Middle Woodland period (ca. 50 B.C. - 400 A.D.). Local cultures,

such as the Valley Phase and the Fox Lake Phase, are marked by the presence of tall conical-shaped vessels with exterior cord marking and punch and boss decoration. The Sonota complex (Neuman 1975) is related to this basic pattern but is defined primarily on the basis of mortuary sites, a dangerous practice.

Sites of Middle Woodland age include burial mounds and small habitation sites on alluvial terraces in small stream valleys. While direct evidence of horticulture is generally lacking, a subsistence pattern involving generalized hunting and intensive gathering, supplemented by some horticulture, is suspected. Bison hunting appears to have been very important in the Dakotas during this period (viz. Neuman 1975), but the evidence from further south indicates a wide range of smaller game animals.

Sites of Middle Woodland age have been documented in the project area by previous surveys. In particular, the Gavins Point site (39YK203) yielded a large series of Valley Phase ceramics (Hall n.d.). Our survey yielded additional Middle Woodland sites and components. Thus, this stretch of the Missouri River appears to have been important in the development of the Valley Phase.

Benn (n.d.) divides the Late Woodland period into two units, Early Late Woodland (A.D. 300 - 700) and Late Late Woodland (A.D. 700 - 1200). In our opinion, this extends the Late Woodland period too late; a termination of A.D. 1050 is more in keeping with the area-wide archeological evidence.

Only a few Early Late Woodland sites have been adequately treated, namely the Rainbow and MAD sites and 25PT1 (Benn n.d.).

They are marked by Held Creek ware which features thin-walled vessels with constricted necks and nearly vertical rims. Small corner-notched points predominate. Lacking is the single cord-impressed decoration which marks the Late Late Woodland.

No previous surveys yielded sites which are readily assignable to this taxon, and our survey also failed to yield any clear example, although some of the sites we labelled merely as "Woodland" could belong. Indeed, the utility of this proposed taxon for the region has yet to be demonstrated.

The Late Late Woodland period is represented by the Loseke Creek Phase in the region immediately around the project area. To the south, it is succeeded by Sterns Creek which is also of Woodland age. Closer to home, it is succeeded by Great Oasis with which there is a considerable overlap in ceramic motifs.

Loseke Creek sites are often found where creeks enter the floodplain of the Missouri River, i.e., in the sort of situation that now constitutes part of the shoreline of Lewis and Clark Lake. Thus, it should not be surprising that previous efforts and the survey reported here found sites of this time period at Lewis and Clark Lake.

Late Woodland sites typically are small (Hurt 1952: 16-17; Kivett 1952: 47) with some evidence for lightly built structures. Conical burial mounds have been documented (Price 1956). Maize (Kivett 1952: 58), squash, and gourd (Haas 1980) have been found in Late Late Woodland sites along with bones of bison and a variety of woodland animals.

The assemblages at these sites include thin-walled vessels with sand or grit temper, constricted necks, and tall rims. Frequently, they are decorated with single cord impressions, although cord-wrapped stick and fingernail impressions also occur. Bent-tube ceramic pipes are also found. Points are usually small, either corner or side notched.

Previous investigations at the Gavins Point (Brown 1968; Hall n.d.) and Tabor (Hurt 1961) sites yielded Late Late Woodland ceramics. Our survey yielded other sites which probably are of this time period, although in many cases diagnostic ceramics were not found in the small exposures typical of most of the sites along the shoreline.

Great Oasis (ca. A.D. 850 - 1050) appears to be transitional between the earlier Woodland cultures of the region and some of the later Plains Village variants. It is distributed from southernmost North Dakota to Nebraska and from southern Minnesota to central Iowa. A recent discovery is a Great Oasis site in central Nebraska, far to the west of previously documented sites (Steve Holen, personal communication).

Great Oasis sites occur as moderately large "villages" and small "camps" (Williams 1975b). Houses similar to those of the later Middle Missouri Tradition have been found, but only at one Great Oasis site. Storage pits are a more frequent phenomenon and these sometimes yield large quantities of cultigens (Mead 1974). The general impression given is of a subsistence pattern more strongly dependent on horticulture than was true of Woodland subsistence patterns.

Great Oasis pottery is highly formalized and quite diagnostic. Two jar forms are present, one with a high unthickened rim and one with a short wedge-shaped rim. Both rim forms occur on fairly squat vessel bodies. Vessels are fairly highly fired and the workmanship is generally excellent. Decoration is standardized (Johnson 1969) and is in the form of narrow trailed lines.

Previous investigations at Lewis and Clark Lake revealed a major Great Oasis site at Gavins Point (Brown 1968; Hall 1961, n.d.), and the site at Weigand Creek (25KX200) had been recorded but not published. Our survey indicated the presence of a minimum of six Great Oasis components along the shoreline.

The Middle Ceramic period, ca. A.D. 1050 - 1400, saw the establishment of cultures even more dependent on maize horticulture. From northwestern Iowa to North Dakota, a tradition of small villages has been labelled the Middle Missouri Tradition. In the region immediately around Lewis and Clark Lake, this unit includes the Mill Creek Variant on the Big and Little Sioux rivers and the Initial Middle Missouri Variant located on a portion of the James River and upstream along the Missouri River in what is now Fort Randall reservoir.

Sites of this tradition consist of compact villages of substantial houses, sometimes fortified. Some are marked by the accumulation of considerable middens.

These variants of the Middle Missouri Tradition share many ceramic traits. Jars dominate the assemblages although seed jars and small bowls are also present. A large majority are sand or

grit tempered, although some shell-tempered forms occur. Both thickened and direct jar rims occur. Decoration occurs most often on jar rims and shoulders. In Mill Creek, rim decoration is incised or trailed; in Initial Middle Missouri, cord-impressed decoration also occurs. Other fairly diagnostic items include grooved mauls, exotic shell beads and pendants (marginella, olivella, and conch or whelk), and decorated antler bracelets.

Evidence of horticulture is common in these sites, either directly in the form of maize, beans, squash, and sunflowers, or indirectly in the form of numerous scapula hoes, squash knives and other agricultural implements. Bison dominate Initial Middle Missouri faunal inventories but are somewhat less common in early Mill Creek deposits. Elk, deer, and antelope were also hunted, and fish (Alex 1977) and birds (Scott 1979) also contributed protein to the diet.

Previous investigations at Lewis and Clark Lake yielded only one site which appeared to have a Mill Creek component and none with an Initial Middle Missouri component. Our survey produced no clear examples of either Mill Creek or Initial sites, and this caused us to review the evidence for a Mill Creek component at Gavins Point (39YK203). Only two of 345 rims in Hall's (n.d.) collection, classified as Chamberlain Plain and Chamberlain Incised, suggest a Middle Missouri Tradition presence. It is quite possible that these two sherds actually derive from the St. Helena component, as some St. Helena sites (especially those in Dixon County) yield ceramics similar to Initial Middle Missouri wares.

During the same time period (ca. A.D. 1050-1400), a different set of cultures developed in western Iowa, Nebraska, and Kansas. Collectively, these are labelled the Central Plains Tradition. Sites of this tradition usually consist of loose scatters of square earthlodges rather than the compact villages of the Middle Missouri Tradition. None of them are marked by significant midden accumulations.

The ceramic tradition of the Central Plains Tradition is distinct from that of the Middle Missouri Tradition. Seed jars are lacking, and bowls are rare. Jars are globular with constricted necks and well-defined rims. Rim forms include direct, collared, and collared with interior channel. The wedge lip and true S-rim of the Middle Missouri Tradition are usually not present. Decoration is in the form of pinching and trailing or incising; cord-impressed decoration is extremely rare.

The subsistence base was a mix of horticulture, hunting, and gathering. Maize, beans, squash, and sunflowers were grown. Bison are less dominant in Central Plains Tradition assemblages than they are in Initial Middle Missouri.

Previous investigations of Lewis and Clark Lake produced no sites attributable to the Central Plains Tradition, as it is defined here (i.e., excluding St. Helena and Loup River Phase). Our survey also did not indicate the presence of any sites of this tradition. The nearest sites which definitely could be assigned to this unit are in Dixon County, a short distance downstream from Gavins Point Dam (Ludwickson et al. 1981: 196-187).

The Coalescent Tradition (ca. A.D. 1300 - historic) develops from an interaction between Central Plains Tradition, Middle Missouri Tradition, and Oneota peoples. The definition used here follows Ludwickson et al. (1981: 161-168) in including St. Helena and Loup River in a Basal Coalescent Variant.

St. Helena sites are much like those of the Central Plains Tradition--scatters of square earthlodges. They appear to differ from Central Plains Tradition sites in having larger numbers of lodges in a given cluster with good evidence of moderately long site duration. The ceramics are basically like those of the Central Plains Tradition, but with indications of close contact with Middle Missouri and Oneota ceramics. Subsistence appears to be similar to that of the Central Plains Tradition.

Previous investigations at Lewis and Clark Lake yielded St. Helena materials from the Gavins Point site (approximately 10% of Hall's collection) and from the Weigand (25KX200) and Santee School site (25KX30). Our survey added only a St. Helena component at 25KX57, although several other sites may have St. Helena components. The collections made also demonstrate that the St. Helena materials at Lewis and Clark Lake are like those from Cedar County, Nebraska (Cooper 1936) and not like the materials from Dixon and Dakota counties which are sometimes called St. Helena. The Cedar County St. Helena ceramics are quite similar to collections from some Loup River Phase sites.

No materials diagnostic of the Initial Coalescent Tradition have been found at Lewis and Clark Lake. This is of interest since

Initial Coalescent materials are common just upstream along Ponca Creek (Bitty 1962; Holen personal communication). Similarly, no sites of the later Extended Coalescent Variant have been found at Lewis and Clark Lake; it is found as far south as Fort Randall reservoir, however.

Partly contemporary with the Coalescent Tradition is the Oneota Tradition. This archeological taxon includes a diverse set of complexes distributed from Nebraska to Indiana and from Michigan to Kansas and Missouri. The single element which ties Oneota together is a distinctive shell-tempered ceramic. Oneota sites appear to range in age from some time after A.D. 1000 to the historic period when Oneota appears to emerge as the Kansa, Missouri, Oto, Ioway, and Winnebago tribes (Griffin 1937).

The Oneota sites closest to Lewis and Clark Lake fall into a group called "western Oneota." Unfortunately, this group has proved to be the least tractable of the Oneota subunits and offers little in the way of coherent information. The western sites probably all postdate A.D. 1300. Oneota sites are sometimes large, and a variety of house types are found (Hall 1962; McKusick 1974; Wedel 1959). The subsistence pattern involved hunting, gathering, and horticulture, but subsistence probably varied from one region to another.

Oneota ceramics include jars with direct rims which vary in height. Shell temper is the dominant type. Broad trailed lines, sometimes with areas or borders of punctates, are a common decorative technique. Pipes, especially disk pipes of true (Minnesota) catlinite, and incised catlinite tablets are also fairly diagnostic.

Previous surveys of the Lewis and Clark Lake area yielded only a trace (two rims) of Oneota material at the Gavins Point site (Hall n.d.). This does not necessarily indicate a distinct Oneota component, as Oneota sherds are found regularly in St. Helena sites, and there is a substantial St. Helena component at Gavins Point. Our survey yielded two sites, 39B041 and 39YK39, with Oneota components. Site 25KX57 yielded one sherd which could be of Oneota derivation.

One early historic archeological complex which has been defined may eventually be found in the project area. This is the Redbird Phase, first defined (as a Focus) by Wood (1956, 1965). Sites of the Redbird Phase are found along the lower Niobrara River and Ponca Creek just upstream from Lewis and Clark Lake.

Originally, Wood (1956) suggested that Redbird represented a Pawnee occupation, but later argued for a Ponca identity (Wood 1965). Both suggestions have something to recommend them, and the issue is not considered settled by all of the archeologists interested in the problem. There is evidence which suggests that both Ponca and Pawnee were in the region at about the right time period.

Sites of this phase consist of small villages of circular earthlodges located on stream terraces and low bluffs. The ceramics are sand-tempered jars with direct and collared rims. Trailed, incised, and punctate designs are present. Vessel bodies are smooth or simple stamped. Very few European trade goods have been found in Redbird sites, and the majority of these derive from a single burial. This suggests a date early in the historic (or protohistoric

period.

No previous survey of Lewis and Clark Lake reported any Redbird sites, and our own efforts yielded no materials diagnostic of this phase. This should not be taken to mean that none are present. A diagnostic (decorated) rim would be required to demonstrate the presence of a Redbird component.

There are other archeological remains, both of Native Americans and Euro-Americans, in the region around Lewis and Clark Lake, but these have not been grouped into archeological complexes. Furthermore, a minimal amount of effort has been put into investigating them. The only substantial investigation of an historic Native American site in the Lewis and Clark area is Hall's (1961, n.d.) excavation at Gavins Point. He excavated a portion of an historic Yankton village, firmly identifiable as Smutty Bear's village of the pre-reservation period. The excavations encountered what appears to have been a pipe-maker's lodge.

Our survey encountered numerous sites with components dating to the historic period. These include other possible pre-reservation period Native American villages, at least one allotment house of the late reservation period, two early townsites, and homesteads. The historic overviews for individual tribes and for the Euro-American frontier present the contexts within which these sites developed.

IV

ETHNOHISTORIC OVERVIEW

INTRODUCTION

In this chapter we present information on those Native American groups known or thought to have been in the project area in the shadowy transition period between the prehistoric and historic eras. The groups covered are the Omaha, Ponca, Yankton, Pawnee, and Santee tribes. For the first four of these groups, we provide discussions of their traditional (oral) histories and the little that can be gleaned from documents, their economy, social organization, village types, burials, and archeology. For the Ponca and Yankton, who were in the area in the historic period, the discussion of the archeology is oriented toward those sites which might be found in the project area. The section on the Santee, who had a reservation in the project area, covers topics pertinent to that period.

THE OMAHA

Introduction

The Omaha have traditionally claimed the project area as their own territory. They ceded it to the United States in the Treaty of 1854 and became entangled in a lawsuit, which involved the Ponca, over ownership of land west of the Aoway Creek in 1912. They are linguistically, culturally, and traditionally, closely affiliated and often allied with the Ponca.

Traditional and Documentary History

Dorsey (1881/82; 1896), Fletcher and La Flesche (1905/06), and Fontenelle (1885) provide three independent sources for Omaha migration stories. Omaha tradition places the ancestral home of the Dhegihan tribes in the Ohio River valley. Of the five Dhegihan tribes, the Quapaw split first moving south to Arkansas; the Osage and Kansa left the migrating group on the lower Missouri. The Ponca and Omaha continued northwest by following either the Missouri or the Des Moines River valleys. Some versions of the tradition assert that the Ioway, Oto, Missouri, and Winnebago also accompanied the migrating Dhegiha. The northwestward march terminated on the Big Sioux River in northwestern Iowa. Dorsey (1886) and Fontenelle mention only one village in this area, while Fletcher and La Flesche (1905/06: 74) refer to two villages here. One of these may be the Blood Run site (Harvey 1979). The Sioux forced the Omaha, Ponca, and their allies the Ioway, to migrate westward which took them to Lake Andes (only one source says this), then on to the mouth of the White River. Fletcher and La Flesche and Fontenelle differ as to the length of time this village was inhabited. Bourgmont, in 1714, located the Omaha village 200 leagues above the Platte (Giraud 1957), which suggests a White River site. It is at this time that the Ponca, according to Omaha tradition, went into the Black Hills. After returning, the Ioway, Omaha, and Ponca drifted downriver, the Ponca stopping at the Niobrara and the Omaha and Ioway continuing on. The Ioway settled on Aoway Creek (see Ponca section for their version

of this). The Omaha formed a village on Bow Creek in Cedar County, Nebraska, which was later known as Bad Village because the Omaha quarreled and divided into two factions. "Bad Village" was abandoned and the main body of the tribe moved south. The tribe reunited later, possibly at the village that Dorsey locates near Covington (South Sioux City), Nebraska.

The next move placed the Omaha in the vicinity of Homer, Nebraska. While there is a discrepancy as to the number of villages in the area, this is the general location of the "Big Village" which was occupied, abandoned periodically, and reoccupied for many years, probably from the 1760's until 1845 when it was finally abandoned for a village near Papillion, Nebraska (Smith 1974).

The earliest documentary mention of the Omaha occurs on the Marquette and Jolliet map (Delanglez 1945, 1946) on which the Omaha are placed in the proximity of the Oto and Ioway. Le Sueur in 1700 placed the Omaha on the banks of the Missouri River and furnished the mapmakers Delisle with further information which problematically located them on the Big Sioux River (M. Wedel 1981). The 1718 Delisle map, possibly incorporating information from Bourgmont, has inscribed "Maha, a wandering nation" in roughly the position of the White River and "Maha" on a tributary of the Missouri--"R. Du Rocher" (Big Sioux?).

Interest in the Missouri waned and reasonably accurate information is not available again until de Kerlerec's 1758 report (1906) which placed the Maha 80 leagues above the Ioway and 310 leagues

above Ft. Chartres, putting the village in the Covington/Omaha area. The "Bad Village" of oral tradition then is bracketed between Bourgmont's report of 1714 and de Kerlerec's report of 1758, but its occupation probably occurred earlier in this time slot, rather than later. De Kerlerec went on to report that the Omaha were still little known. However, by the time of Cruzat's reports to the Spanish crown in 1777, the Omaha are involved in the expanding fur trade. The famous chief El Pajaro Negro, Blackbird, is mentioned and the village is on a small tributary of the Missouri 60 leagues from the mouth of the Platte. This is surely the "Big Village" of oral tradition (Houck 1909, 1: 138-148).

Chief Blackbird is a major figure in the history of the area prior to the turn of the century, and a figure which later spawned legends, variants of which still occur in the oral traditions of the plains. He is described by a contemporary, Truteau, as "the most shrewd, the most deceitful and the greatest rascal of all the nations who inhabit the Missouri" (Nasatir 1952: 282). In 1794, Blackbird visited Truteau, who was in winter quarters above the Ponca Creek. The party was undoubtedly out on the winter hunt and apparently moved freely over Ponca territory. Indeed, Truteau complained about Blackbird's influence over the Ponca: "This great rascal of the Omahas especially is heard by the Poncas as an oracle. He is their protecting god" (Nasatir 1952: 293). One glimpses not only the power possible for the individual in tribal societies, but also the complexity of intertribal politics and the power plays which surfaced in

Truteau's naive dealings with the Ponca and their more powerful neighbors, the Omaha. Blackbird may also have been responsible for a temporary division of the Omaha. The village of Little Bow, who seceded from the tribe after Blackbird's rise to power, was located in the vicinity of the mouth of Bow Creek and was frequently mentioned by early explorers. This village was abandoned before 1794 or 1795, probably when Little Bow died.

The Lewis and Clark expedition (1904/05, 1: 109-110) found the Omaha Creek village abandoned. The Omaha had left in despair after the smallpox epidemic of 1800-01 to wander in the high plains (Fletcher and La Flesche 1905/06: 86-87). Dorsey places them for five years, around this time, on the Elkhorn and Shell Creeks. They had returned to Big Village by 1811 (Bradbury 1966: 86-90), if not before.

The history of the Omaha in the following years and their different moves reflect the divergent forces of Sioux raids, the need to participate in the fur trade, pressure from land hungry Americans, and the need for protection by the U. S. government. In 1819, the Omaha moved to the Elkhorn River, under pressure from the Sauk Indians. They remained on the Elkhorn until 1833, although a faction briefly reinhabited Big Village. This village, visited by Duke Paul Wilhelm in 1823, is probably the Stanton Site, 25ST1, (Gunnerson n.d.). From 1834 to 1845 the Omaha were usually in the Omaha Creek area, but appear to have become more mobile in an attempt to avoid Dakota depredations. The tribe also appears to have become

increasingly factionalized during this time.

The first land cessions began in 1830, and by an 1854 treaty, the Omaha ceded the remaining lands and the reservation just south of the old Omaha Creek village was established. The Omaha were now under increasing pressure to become "civilized" farmers which led to the division of their remaining lands in severalty after 1882. The Omaha thus became a "test case" for such a policy, which became law (The Dawes Act) in 1887.

Economy

While the Omaha were familiar with territory ranging from the Mississippi to the headwaters of the Platte, the territory they traditionally moved in was much smaller. The western bank of the Missouri from the mouth of the Niobrara to the mouth of the Platte, following the Platte to the headwaters of Shell Creek and thence north to the Missouri, encompassed this latter claim. The Omaha had to share this domain with the Oto to the south, the Pawnee on the southwest, the Ponca and the Sioux on the north (Fletcher and La Flesche 1905/06: 21). The raids of the Sioux in the 18th and 19th centuries kept the Omaha activities south of Omaha Creek villages, and later village locations were all to the south and southwest.

The Omaha subsistence base rested on a combination of hunting and horticulture. The fur trade became an increasingly important part of the Omaha economy, beginning in the 18th century. Hunting territories shifted through time. In the earlier period the Omaha

hunted to the north in the Blue Earth River area in present Minnesota; this shifted south under Sioux pressure. The Omaha abandoned hunting territories east to the Des Moines under pressure from the Sauk in the early 19th century. They also hunted west into the Sand Hills of Nebraska and on into the buffalo ranges further west and south, but even these hunting grounds became increasingly dangerous by mid-century. The major buffalo hunt took place in the summer after the corn was planted and weeded (Dorsey 1881/82: 282-285). The hunt was enmeshed in a rich ceremonial round of activities. Even the arrangement of the camp circle was dictated by religious concerns and traditional lore. The hunt was supervised by special directors, and a police force with harsh punitive powers supervised the march and the approach to the buffalo herd. The Omaha returned to their permanent villages about the first of September to harvest their crops. The winter buffalo hunt began in the latter part of October, lasting until April; deer and elk were sought closer to the village in the river bottoms. Small parties scattered over the land. "Each head of a family has his tent pitched in a sheltered spot . . . and for this purpose the hunters did not always go in one large party, but scattered in several directions, camping wherever they could find heavy timber or brush . . . " (Dorsey 1881/82: 284).

The garden patches were located along the borders of streams and ranged in size from half an acre to two or three acres in extent. Corn and squash were planted in alternate hills. Beans were either planted with the corn or in separate hills, depending on the amount

of space available. The Omaha had some thirteen to fifteen named varieties of corn (Dorsey 1881/82: 304; Will and Hyde 1917: 303-305), three native varieties of pumpkin and fifteen varieties of beans (Dorsey 1881/82: 306-308). While maize was subservient to buffalo as a sustainer of life, it was still surrounded by an elaborate ceremonialism (Fletcher and La Flesche 1905/06: 261).

Social Organization

The social organization of Omaha is a complex web of kinship groups, societies, and ranked positions of civil and religious authority. The fundamental structure is the clan. It is a patrilineal, corporate organization which owned religious ceremonies controlled by a clan "priest." There were ten named clans which were divided into two major divisions, representing the earth and the sky (Fletcher and La Flesche: 1905/06: 195-196).

There were also three major ranks or grades among the Omaha: commoner, brave, and chief. Braves obviously earned their position through honors gained in war. The designation of the chiefs is a more complex issue. There were two major grades of chiefs. The first grade was unlimited as to membership. The second was more elevated and limited in membership. The second grade elected the first group to their position. Once in the first grade, a series of ranks had to be worked through to reach a position such that once a position opened in the elevated grade, one could qualify for it. From this elevated grade came the Council of Seven, the

governing body of the tribe, and from the Council of Seven, the two principal chiefs of the Omaha. The Council of Seven was a governing body representing the whole tribe, with the power to subordinate all factions to a central authority and settle all contentions (Fletcher and La Flesche 1905/06: 202-208).

Societies formed a cross cutting bond for tribal unity and organization. There were two types of societies, secret and social. Membership in the social societies were acquired through performing the acts required for eligibility; these included the warrior societies and those for purely social purposes. The secret societies dealt with "mysteries and concerning healing rituals and occult and shamanistic proceedings" (Fletcher and La Flesche 1905/06: 459; Fortune 1932).

Villages

The Omaha have inhabited more than one village simultaneously on a number of occasions--the split after Bad Village, the temporary division in 1828 (Smith 1974: 114), and the three villages inhabited on the reservation (Fletcher and La Flesche 1905/06: 629-630). Most of the references indicate, however, only one village at any one time. This must have been a large village for estimates of the aboriginal population are around 3,000 individuals, with estimates for the first part of the 19th century generally varying between 1200 and 1800 individuals (Smith 1974: 198-201).

"The site for the village was always chosen near a running stream convenient to timber and generally not far from hills. . . "

(Fletcher and La Flesche (1905/06: 95). The earthlodge and the tipi were typical dwellings used by the Omaha in their permanent villages. Occasionally bark lodges were used for summer occupancy (Dorsey 1891/92: 269). One estimate by Bradbury in 1811 (1966: 88) for Big Village suggested there were at least eighty lodges.

Burials

Both underground and scaffold burials have been observed among the Omaha (Bushnell 1927: 50-53). In underground burials, the body was "placed in a grave in a sitting posture, facing the east. Graves were usually made on a hilltop. The shallow hole was dug and the body placed in it, and poles were arranged over the opening upon which earth was heaped into a mound" (Fletcher and La Flesche 1905/06: 592).

Archeology

A few historic Omaha sites have been located and dug. John Champe in 1940-41 excavated an Omaha cemetery and nearby "Large Village" of the Omaha near Homer. Most of the material was of European derivation. One of the major problems has been the failure to associate a distinctive pottery type with the Omaha. The early belief that Omaha could be equated with Great Oasis is rejected today. There has been speculation that ceramically the Omaha may have been part of the Oneota Tradition. The association of Oneota-like pottery with the Osage and Kansa is used as supporting evidence

(Henning 1970: 146-148). The suggestion by Wood (1965) that the Redbird Focus is the archeological product of the Ponca could lend support to an ultimate "Oneota" affiliation for these groups. Harvey (1979: 228) suggests that the distinction between the pottery at Redbird Focus and Oneota pottery may not be as great as first suggested. The Omaha site at Bow Creek, possibly occupied during the 1730's, may be early enough to still contain remains of pottery, and further excavation there may solve some of the problems pertaining to the relationship between Omaha-Ponca, Oneota, and Redbird.

Summary

The Omaha did not have villages in the project area, either in their traditional oral history, nor do any of the documentary records place them there. The project area was claimed by them and this claim carried enough force that they ceded the territory in the treaty of 1854. Both hunting excursions and their political alliance with the Ponca brought them into the area. Blackbird's dealings with Truteau in the winter of 1794 exemplify both motives. Sioux pressure after this forced them to generally operate well to the south of the project area. Because of the close cultural and linguistic ties between the Omaha and the Ponca, statements about the better documented Omaha may be used with discretion, to cast light on the Ponca. The solution of the archeological problem of the forebears of either the Ponca or the Omaha will facilitate archeological research on the other group.

THE PONCA

Introduction

The Ponca lived in or near the research area from proto-historic times until their removal to Oklahoma in 1878. Even after the treaty of 1858 which formally ceded land, including the research area, the Ponca occasionally occupied and utilized its resources. After the Northern Ponca returned in 1879 from their Oklahoma exile, they stayed briefly with the Santee before a reservation was formed for them just north of the project area. The southern bank of the Missouri thus, has been the scene of much of Ponca history.

Traditional and Documentary History

There is a large body of published and unpublished oral traditional history relating to the movement of the Ponca. Much of it is based on Omaha tradition, which includes the Ponca as part of the Omaha tribe. As there is no reliable literary reference to the Ponca until 1785, their early movements may only hesitantly be reconstructed through these oral traditions.

Early migration traditions of the Omaha are detailed in the "Omaha" section of this report, so only a brief sketch of the history from the Ponca point of view is included here. The Ponca and Omaha first appeared in the general area of Lewis and Clark Lake near the pipestone quarries in southwestern Minnesota. The Yankton are generally given credit for driving them southward again around 1700.

Independent Ponca oral tradition supports an early habitation of the pipestone quarry region (Yellow Horse 1912: 141; LeRoy 1912: 29).

According to Omaha tradition, after leaving the quarries there was a drift across southeastern South Dakota which led to the area around the north of the White River. The Ponca then journeyed on toward the Black Hills. On their return, the combined Omaha, Ioway, and Ponca tribes followed the Missouri downriver, the Ponca stopping near the Niobrara and the Omaha and Ioway moving on to settle on Bow Creek and Aoway Creek, respectively. Champe (quoted in Wood 1959: 10) suggests that the move to the White River occurred circa 1715 and that the Omaha settlement on Bow Creek was in 1735.

The fragments of Ponca oral tradition agree with this general framework, although diverging radically on a number of details. Both Louis LeRoy (1912: 33-34) and Joe Birdhead (1912: 73) tell of two long round trips through the Nebraska/Dakota territory, rather than the one indicated in Omaha tradition. There is also disagreement about Ponca occupancy of sites in eastern Nebraska. Ponca oral tradition locates two major villages east of the project area, the Ponca City site and Tiwahni Village on Bow Creek, and a number of smaller or more temporary sites. These sites appear to date in the first half of the 1700's.

The tradition of a Ponca settlement near Ponca City and one on Bow Creek has undoubtedly received extra emphasis because of the Omaha Land Claims case. Louis LeRoy details the events surrounding the Ponca settlement:

The second clip around, when they went by the Black Hills, the Poncas came back and went back to Ponca City their old village the second time. Their second trip where they found the Iowas there. . . . They were dragging weeds on the old Ponca fields . . . and the Poncas told them they were getting ready to farm. "We farmed this first ourselves an [sic] you had better go back . . ." (LeRoy 1912: 64).

While at the Ponca City village the Ponca also had a village at the mouth of the Platte. Here they were harrassed by the Ioways and moved north, meeting the Omaha in the vicinity of Homer. This meeting bears a striking resemblance to the one told by the Omaha about the reunion of the Omaha tribe after the Bad Village separation and so possibly is a variant on this classic folk theme (Howard 1970; Fletcher and LaFlesche 1905/06: 86; see also Wood 1959). It is quite possible that individuals who later identified with the Ponca tribe were part of this Omaha hegira.

The historicity of these events is of course open to question, but the sojourn of the Ioway on Aowa Creek was probably in the 1720's or 1730's after which they did move south to the region around the mouth of the Platte, abandoning the Platte in the 1760's (Blaine 1979). A rough time table puts the conjectural intermittent Ponca occupation of the Dixon County, Aowa Creek area in the second quarter of the 18th century. There is also oral historical evidence to support a late occupancy, circa 1850, of the Ponca City site (Howe 1912: 176). It appears, however, to have attracted later Ponca residents as a trading center on the frontier rather than as a generally occupied village site.

The Tiwahni village on Bow Creek appears from Ponca testimony

to have been inhabited simultaneously with a number of other villages, and is representative of an early westerly drift of the Ponca. Jack Penisky describes the situation:

A. I was told that there was a large tribe, some of them came on up to the mouth of the Tonwonni, and from there up opposite to Yankton. They came on up and on the other side of Santee agency some of them camped there . . .

Q. Who visited?

A. The old Ponca village and the one at Tonwonni, and these camps visited backwards and forwards. There was not room down there for all of them, there was such a large tribe (Penisky 1912: 127).

There is some suggestion that the Tiwahni village mentioned by the Ponca was actually the Bad Village of the Omaha located on Bow Creek. These sites have no referent outside of the oral history of the Ponca, but do indicate, if not exact village location, a traditional claim over territory lying well to the east of the project area.

Oral traditions also refer to important village sites north and west of the project area. A great deal of attention has been given to the Ponca Fort site because tradition and historical reconstruction indicate that it is a protohistoric Ponca site. It therefore has relevance to the question about the tie between the Ponca and the protohistoric Redbird Focus (see Archeology section). Many of Howard's (1970: 125-26) informants mentioned this site, and the tribal historian, Peter LeClaire, describes events connected with the site:

At the dirt fort Na zah there were four battles [that] took place with the Pa du ca. When the Ponca came home from the west, the Pa du ca were living in their dirt houses and [they] had a battle and drove them south . . . (Howard 1970: 126)

Howard (1970) and Wood (1959) suggest that the Paduca were the Apache, and Wood dates occupancy of the fort at around 1790-1800.

By the time that historical records make mention of the tribe, Ponca Creek, the mouth of the Niobrara, and Bazile Creek represent the three major locations of the Ponca. In the Spanish records, the first unambiguous reference to the Ponca occurs. Governor Miró described the Ponca and located their village on a stream below the Niobrara--possibly Bazile Creek (Nasatir 1952: 123, 126). The next references to the Ponca are found in the two expeditions of the Missouri Company. The first, under Truteau, went up the Missouri in 1794-95. The Ponca village was located a league above the mouth of the Niobrara (Nasatir 1952: 266). The MacKay-Evans expedition the following season located the village 5/6 of a league above the Niobrara and a league-and-a-half from the Missouri (Nasatir 1952: 490; Wood 1981). These descriptions refer to one of the Ponca Creek villages. Perrin Du Lac in 1802 also locates the Ponca 3 miles above the Niobrara (Nasatir 1952: 710). Finally, Lewis and Clark (1904-05: 139-140) make reference to two villages of the Ponca, one abandoned and the other temporarily unoccupied. The abandoned village was three miles up the Niobrara River on the north side, while the unoccupied village was undoubtedly the one described by Truteau, Evans and McKay, and Du Lac. This, interestingly, is the last reliable contemporary reference to Ponca villages on the Ponca Creek area until 1852-53. Howard (1970: 123), however, speculates that Hubdon (Fish Smell) village may have been founded in 1837, one and one-half miles northwest of

the mouth of Ponca Creek.

There are few references to the Ponca on Ponca Creek between 1804 and 1852. One is a reference on a map accompanying Long's 1820 expedition (James 1905) which places the Ponca on Ponca Creek, but the expedition never actually reached this area. The other reference is also a map, that of Nicollet (1843). Whether Nicollet was noting an historic or a current occupation is not stated. Nicollet passed the vicinity of Bazile (his "White Lime") Creek, Niobrara River, and Ponca Creek on May 23, 1839. At that time he notes only a Ponca village a fraction of a mile west of the mouth of Bazile Creek (Nicollet "Route Maps" 1839, page 404).

The next reference to the Ponca after Lewis and Clark occurs in 1811 and places them in the Bazile Creek area. Brackenridge locates the village four miles below the mouth of the Niobrara (Brackenridge 1904: 93-94). The village is on Bazile Creek again in 1825 when the Atkinson expedition negotiated a treaty with the Ponca (Reid and Gannon 1929: 9). Maximilian makes reference in 1833 to the former village on Bazile Creek. Maximilian's scattered remarks on Ponca village locations are worth quoting as they are frequently misused:

[The Ponca] dwell on both sides of Running-Water River, and the Ponca Creek, . . . They formerly lived, like the Omahas, in clay huts, at the mouth of the river . . . they have since adopted the mode of life of the former [the Sioux], living more generally in tents made of skins, and changing their place from time to time . . . The band of them which we met with here, has set up eight or nine leather tents, at the mouth of Basil Creek . . . [We] halted in the vicinity of Basil Creek, where the Puncas formerly dwelt, numbers of whose

graves are seen upon the hills . . . At the time when the Puncas separated from the Omaha, they built a kind of fort of earth, some miles up this river [Ponca Creek], which, however, they no longer occupy . . . The village of these Indians [Ponca], consisting of nearly 100 tents, was about four day's journey up L'Eau qui Court (Wied-Neuwied 1906, Vol. 22: 284-285, 290-291, Vol. 24: 99).

Howard's (1970: 124, 129) use of the first part of this passage to establish village locations is probably inappropriate; more significant is the direct testimony that the Ponca Fort and Bazile Creek sites had both been abandoned and that all reference to bands and villages refer to the mobile communities of tipis. Indeed, the reference to the Niobrara village is not even to the one traditionally referred to, which is only about four miles, not four days, up the Niobrara. The overall impression is one of a population, progressively more mobile and tending to fragment into small groups. Indeed, the report of Standing Elk that he was born around 1833 at Chopped Tree, a site between the Niobrara and Bazile Creek (a site mentioned by no one else) would seem quite reasonable, given Maximilian's description of the Ponca (Howard 1970: 122). Nicollet's notes, cited above, place a camp of Ponca on Bazile Creek six years after Maximilian described it as abandoned.

The third frequently mentioned site of the Ponca is the Niobrara. Identifying village occupancy in this area is complicated by a number of factors: 1) The Niobrara valley constituted the major hunting grounds of the Ponca. Casual reference to the Ponca on the Niobrara therefore is not necessarily indicative of village location. 2) As the Niobrara is a major landmark only four miles from the mouth of

Bazile Creek and only ten miles from Ponca Creek, casual references in government reports may have placed the Ponca at the Niobrara when indeed they were at smaller, adjacent creeks. As noted below, the problem is complicated by the scattered nature of the settlements (Jablow 1974: 195). 3) The mouth of the Niobrara River is the point at which the trading posts for the Ponca have traditionally been located. There appears to be no need or desire to locate the trading station in the village. Reference to a trading post then does generally fix the Ponca in the area.

The government began issuing licenses in 1822 and licenses to trade with the Ponca on the Niobrara were issued fairly consistently from 1824 onward. Le Clerq founded Fort Mitchell at the mouth of the Niobrara in 1833; it was abandoned in 1837 (Chittenden 1935: 927). Larpeur (1898: 301) abandoned Sarpy's Post on the Niobrara after the winter of 1852-53, but there were again trading houses in the area in later years (Howe 1912). After Lewis and Clark noted the abandoned village on the Niobrara, the next reference to a village there is in the military memoirs of Cooke (1859) which place the Ponca on the Niobrara around 1814. Morse's (1822) tabulation of Indian tribes also places the Ponca on the Niobrara. An odd reference in a letter by Peter Wilson (1824) is headed "Mouth of L'Eau qui Coir, Ponca Village," and the text reads: "This morning just as we touched the shore a small party of Poncas made their appearance and from them I learned that the whole nation was coming in and would be up shortly. In one hour after they arrived . . . "

In 1846, the Mormons found Ponca "camps from the mouth of the Niobrara to Five Mile (Bazile) Creek" (Fry 1922: 5). DeSmet's 1848 reference unfortunately lacks clarity. He found the Ponca at their favorite haunts at the mouth of the Niobrara, but was taken to their village four miles away. This location could be the old Niobrara village, the Bazile Creek village, and possibly the Ponca Creek area (DeSmet 1905: 626).

Before continuing with the historical perspective of the 1840's and 1850's, a bit of the evolving social organization of the Ponca should be mentioned. The Ponca in the 1852 Larpenteur reference (1898: 302-302) were divided into two bands, later known as the Fish Smellers and the Grey Blankets. Birdhead states that this division took place when he was fifteen, making the date 1841. Howard speculates that 1837 might be a better guess as the event is associated with a smallpox epidemic (Howard 1970). The traditional location of the Grey Blanket village was described by Peter Le Claire, tribal historian:

West of the Niobrara is the gray blanket Village. The old village is north of the railroad track. It has washed away . . . They were at this old village north of the railroad track when the Mormons came, in 1846. . . (Howard 1970: 126).

Note the contrast between Le Claire's view of a "village" in a well-defined location and the Mormon account which has "camps" scattered between Bazile Creek and the Niobrara.

Hubdon Village, or the Fish-Smeller Village, was located northwest of Ponca Creek. According to Howard, it was established circa

1837-41. Peter Le Claire states:

At this village the Poncas had their last sun dance before they were marched to Okla. by force. On the south there is a ridge they call Ma ah zee burying place on top of the ridge (Howard 1970: 123).

Given this information, the Nicollet map of 1843 showing a Ponca village between Bazile Creek and the Niobrara and north of Ponca Creek is of interest. However, until further information about the nature of the map can be obtained, Jablow's (1974: 240) suggestion that it simply represents a set of historically known village sites is equally plausible.

The tribal division appeared to be a long standing one as it lasted well into the reservation period which started with the treaty of 1858. In 1873 the agent describes the conditions of the Ponca settlement:

I found the Poncas numbering about 750 souls, living in three villages, (one entirely of tents or tepees). . .

1. Agency Town. . . an Indian population of one hundred and twenty-three "half-breed," families or lodges, often two or more in one house.

2. Hu-b-than, or Fish Town, occupied by a mixed population of full-blood Indians and half-breeds numbering twenty-four lodges.

3. Point Village, occupied altogether by full-blood Indians, with a council-house on the north bank of the Niobrara . . . Population, fifty-six lodges at the time of my arrival here, living in tents or tepees among the forest-trees . . . (BIA AR 1873: 239).

Note that the agent's account of 1873 matches well with Le Claire's traditional account; it may be that Howard's dates for the latter are too early.

The treaty of 1858 formed a reservation which lay between Ponca Creek and the Niobrara. There are frequent reports during this time of the Ponca using lands south of the Niobrara, particularly for hay crops, and the agent in 1864 reports that a friendly party of Ponca were ambushed near Niobrara by members of the 7th Iowa Cavalry who were stationed at Niobrara. The Ponca were coming home from a visit to the Omaha. The treaty in 1865 readjusted tribal borders, and the agency was moved north of the Missouri (LeRoy 1912: 63). This agency is probably the Scarry Tree settlement (Howard 1970: 124), or at least its replacement, as the original was destroyed in a flood in 1873 (BIA AR 1873: 24). Pressure on the Ponca from the Sioux was intensified when a treaty with the Sioux in 1868 confused tribal boundaries. This, coupled with general government neglect, brought a crisis situation which led to the forced removal of the Ponca in 1878. The removal became a cause celebre for the Indian rights groups, and when Chief Standing Bear led a party back to the old reservation in 1879, the ensuing trial became a landmark in Indian law (Howard 1965: 30-39). Interestingly enough, this return places the Ponca again in the project area, for thirty Ponca came to Santee in 1879 and were granted the right to move in and the children began attending the Santee schools (BIA AR 1879: 106). The following year they returned to the neighborhood of their old reservation (BIA AR 1880: 122). The Northern Ponca totalled about 170 individuals (BIA AR 1884: 124). They remained, were allotted land, and became gradually acculturated and assimilated.

In 1962 the Federal trust relationship to the northern Ponca band was terminated and they legally ceased to exist as a tribe (Howard 1965: 38).

Economy

There are conflicting statements about the Ponca subsistence base. Alternation between buffalo nomadism and more horticultural proclivities (noted to a lesser degree also among the Omaha, Arikara, and Yankton) seems to have covered the entire historic period of the Ponca. Within a short interval one author will declare them horticultural and another purely bison hunters. Nonetheless, a general pattern appears in which the Ponca became increasingly nomadic through the 1830's. Then decreasing resources and increasing military turbulence on the high plains forced them, in the 1840's and 1850's, to establish permanent villages and increase their horticultural endeavors.

Some of the apparent alternation may simply represent a failure on the part of Europeans to recognize a seasonal round in which there were summer and winter bison hunts, with agricultural pursuits limited to the spring and fall. Miró in 1785 describes the Ponca as wandering, but noted a permanent village on Bazile Creek (Nasatir 1952: 126). Collot confirms this description in 1796:

Although these Indians have their fixed dwelling in this place [Ponca Creek], they are not sedentary, and do not cultivate the ground, but live by hunting wild bullocks. . . they kill also great numbers of otters, beavers, and roebucks (Collot 1924: 283).

Tableau in 1802, however, paints a picture of a predominantly agricultural people (Jablow 1974: 147). Lewis (1806: 710) suggests that the Ponca are travelling on the high plains with the Omaha who had abandoned their village after the smallpox epidemic (but see Fletcher and La Flesche 1905-06: 87 for a less genial description of these events). A number of references in the 1820's refer both to the horticultural activities and the wandering nature of the Ponca:

They live in a dirt village at the mouth of White Paint Creek on the Missouri . . . They cultivate corn, pumpkins, S c., and leave their village in the spring and fall for the chase. They hunt in the neighboring country to the west and northwest, for buffalo, of which they get an abundant supply, both of flesh for food, and robes for clothing and traffic (Atkinson 1826: 8).

Maximilian in 1833 notes that the Ponca had not raised crops for the previous three years, but were going to obtain corn from the Omaha and plant crops that season (Wied-Neuwied 1906, Vol. 22: 285). Major Pilcher notes in 1835: "[the Ponca] inhabit the country on the L'eau qui coure from its junction with the Missouri to its sources in the Black Hills . . . Their habits like the Sioux are wandering and they subsist by the chase entirely" (Jablow 1974: 240). The references in the 1840's and 1850's increasingly mention the agricultural proclivities of the Ponca. In 1848 the Ponca were at the mouth of the Niobrara, "their favorite haunt during the fruit season and the gathering of the corn harvest. . . Although attached by taste to the wandering life, they have begun to cultivate some fields of corn, of pumpkins and potatoes" . . (DeSmet 1905: 625, 627). Warren in 1855 notes the

Ponca "returning from the buffalo hunt to their cornfields at the mouth of the [Niobrara] river" (Warren 1856: 25). A number of Ponca remember the old fields along Bazile Creek. "They had fields down all along the creek and up quite a way on the other side, and from there on East under the bluff. Each one had patches" (Yellow Horse 1912: 144). Joe Birdhead (1912: 68) recalled, "My Grandfather, meaning my father's father, farmed down below and east on the hill. Near where that white man by the name of Foreman lives." This is probably the NE $\frac{1}{4}$ NW $\frac{1}{4}$, Sec. 18, 32N 5W.

The hunting expeditions were now closer to home. The Mormons in 1846 noted that the Ponca were wintering between Niobrara and Bazile Creek, not on the high plains (Fry 1922). Raynolds in 1860 found a group of Ponca hunting on the Elkhorn (Raynolds 1867: 126). The Ponca in the 1912 testimony mentioned hunting expeditions in their youth on the Elkhorn (Birdhead 1912: 102-103; Penisky 1912: 129-130; LeRoy 1912: 31-32). Howard (1965: 30) suggests that the 1855 tribal bison hunt was their last successful one, although the hunts continued (BIA AR 1863: 278) to supplement the unpredictable corn crops.

These shifts are undoubtedly the result of diminishing game supplies and increasing military activity on the high plains. The Ponca, originally at war with the Sioux, became their allies for a while. Atkinson reports in 1826: "The Ponca have for many years sustained themselves, in their present position, against the Sioux, their nearest neighbors to the north, and until lately, their bitter

enemies." By 1835 Major Dougherty writes:

[The Ponca] keep themselves out in the plains among the Sioux and continue to carry on war with them against the Pawnees . . . Peace between them and the Pawnees I consider hopeless, until the peace is first established between the Sioux and Pawnees, they being so completely under the control of the Sioux" (Jablow 1974: 233).

The diminishing game supplies noted in 1831 decreased further in the 1840's (Jablow 1974: 209, 262) and finally began to seriously affect hunting territories. By 1848 "the Poncas are often driven to the necessity of hunting in the lands of the Sioux and the Cheyenne" (DeSmet 1905: 1188). The fragile truce with the more powerful Sioux dissolved and the Sioux again became the Ponca's most implacable enemy.

Social Organization

There is a long tradition that prior to the epidemics that passed over the Plains in the protohistoric period, the Ponca were a large tribe (Jablow 1974: 147; Howard 1965: 17). Historic population estimates are small but vary from 500 to 5,000; most average around 800 (Jablow 1974: 365-368). While tradition indicates that the Ponca were a renegade clan from the Omaha, they developed a full fledged tribal organization similar to the other Dhegiha Siouan groups. Dorsey (1893/94: 228-229) records a complex of eight clans with subclans and phratries. Skinner (1915: 794), Fletcher and La Flesche (1905/06: 42-47), and Howard (1965: 81-91) find only seven clans and no phratries or moieties. The clans have associated taboos, ritual objects, and interlocking ritual and social

responsibilities; descent in the clan is patrilineal. A complex of dancing societies concerned with war, healing, and entertainment crosscut the clan organization (Howard 1965; Skinner 1915).

The route to social prestige and success was through chieftainship, war honors, or shamanism. The exact role and requirements of a chief are now difficult to determine, and the fragmentary descriptions which remain are contradictory. Ponca chieftainship appears to be gained either by merit or inheritance (Skinner 1915: 709-799; Whitman 1939), and the chiefs were ranked as "big" and "little" (Howard 1965: 95). Their number is not known although Skinner says there were hereditary chiefs in each clan (see also Fletcher and La Flesche 1905/06: 51). Decisions were evidently made in council, although individual power to influence decisions must have been great. Two prominent chiefs, one for each of the two bands, were recognized in the 1850's. The chiefs appointed the buffalo police, braves selected from one of the societies to enforce order on the hunt. The position of warrior or brave in the Plains was universally high and writers often give a list of deeds and symbols which rank the braves. Howard (1965: 135-137) notes much variation in the lists, suggesting a great deal of personal interpretation in the rankings. Shamanistic power, the ability to control supernatural forces, largely for healing, was obtained by the vision quest although purchase was possible. The power was feared because of the ambivalence of its potential for good or evil (Whitman 1939).

Villages

The structure of the Ponca village varied with their economic activity. The Ponca built and used four different types of structures. The round earthlodge, a hemispherical "bark" wigwam, more often covered with skins than bark, an elongated lodge resembling the wigwam, and the tipi (Howard 1965: 56). The earthlodges resembled those constructed by the Omaha, and unlike the highly ritualized order of the camp circle, were built in no particular arrangement within the village. The extent to which the Ponca used the earthlodge varied with time. After Atkinson's 1826 report mentioning a Ponca mud village on Bazile Creek, references to the Ponca place them in tipis. Maximilian in 1833 noted the 8 or 9 tipis encamped on Bazile Creek, and 100 tents on the Niobrara. The scattered nature of Ponca encampments, particularly typical of the winter hunt, is described by several sources (cf. Fry 1922). John Premeaux, referring to settlements, states: "Just a few scattered here and there. They camped from here [Niobrara] up and down the creek [Bazile]. The main one was at the mouth of Bazile Creek (Premeaux 1912: 30). While the Ponca were basically using the tipi, they still constructed earthlodges. A description of their condition in 1862 clearly illustrates this point:

During the last winter they had but ten log houses and two earth-covered lodges, which were occupied by perhaps 120 persons. The remainder of the tribe, over 900 persons, lived in their te-pees . . . Very few, possibly twenty of them, were covered with skins . . . About one-third of the others were covered with cotton drilling or ticking and the remaining two-thirds with common cotton sheeting (BIA AR 1862: 187).

The three villages of the 1873 period still contained many tipis. According to Skinner (1915), the last earthlodge was erected among the southern Ponca in 1880.

Burials

Both scaffold burials and internments were practiced by the Ponca (Bushnell 1927). Raynolds gives a brief description of a Ponca burial:

Near our camp upon the hillside are several mounds freshly thrown up, and constituting a Ponca cemetery. The modus operandi of erecting these mounds is as follows: Two perpendicular stakes are planted in the ground and connected by a horizontal bar resting on their tops. Slanting poles are then laid upon each side resting upon the ridge, and forming a species of wooden tent, within which the dead bodies are laid, when the whole is covered with earth forming a high circular mound (Raynolds 1867: 125).

The hills surrounding Ponca encampments are the usual burying places. A few such places were recalled by the Ponca testifying in 1912. Two burial grounds around Niobrara are noted. One is northwest of Niobrara in an area known as the Sand Ridges; the victims of a smallpox epidemic were buried here (LeRoy 1912: 31). Also the Chief Ishkatape was buried here, near the "the old packing house on the ridge near the slough" (LeRoy 1912: 34; Birdhead 1912: 101). John Premeaux notes Ponca burials south of Niobrara "on this bench here-- this ledge around here South of town" (Premeaux 1912: 9). Burial grounds were also noted on Bazile Creek. LeRoy describes the area: "There are some old Indian burial grounds at the mouth of the Bazile Creek on each side of the hill. You can go down there every day

and dig and strike old bones there" (LeRoy 1912: 30-31). Jack Penisky comments, "they buried my grandfather, No Knife, on the Northeast of the Creek" (Penisky 1912: 128).

Joe Birdhead described a number of other burials in the area:

This last camping ground near the mouth of Bazile Creek, there was another one of the old chiefs buried on the hill. His name was Wah-ka-nu-zhe. . . further up the Bazile Creek, my mother's father was buried . . . This same place near the mouth of Bazile Creek there is a high chalk bluff, was one of the leading chiefs by the name of As-ha-wa-ge [or] Ta-tan-ka-Na-jim. . . [he] was buried here (J. Birdhead 1912: 67).

The Chief Ta Sau was "buried a little this side of Santee Agency on the bluff" (LeRoy 1912: 34). Joe Birdhead (1912: 68) mentioned an old chief's burial near Lost Creek on a high hill. Lucille Howe (1912: 176) noted the graves near the Santee agency.

Archeology

The archeology of the Ponca is perhaps a classic case of the problems of the direct historical approach. The Ponca by tradition were relative late-comers to the Missouri, arriving in protohistoric times. With the influx of trade goods into the area, many of the diagnostic traits of the group, e.g., pottery, were quickly lost. The classic problem of locating a definitely Ponca settlement which is early enough to have diagnostic pottery remains is one part of the problem; the other is finding an appropriate prehistoric culture that fits in time and location with the historic element. The most likely archeological complex is the Redbird Focus.

The focus may be briefly characterized as an earthlodge complex, the people subsisting on horticulture and hunting . . . The four excavated sites consist of semi-permanent villages on streams near wide, fertile river bottoms . . . The villages are small and open, with no apparent defensive features . . . (Wood 1965: 113).

They are located on or near the Niobrara. "Eleven camp sites on the Niobrara and Elkhorn Rivers are identified as components of the focus. . . Perhaps they are temporary stations occupied while the people were on bison hunting expeditions" (Wood 1965: 114). Redbird Focus pottery is Evans and Mackay ware. The time span is roughly A.D. 1600 to 1750, based on the presence of trade goods at some of the sites. The time and area fit well with the Ponca occupation. The problem arises in that the site which should confirm this relationship, the Ponca Fort site, occupied about A.D. 1790-1800, yielded not Evans and Mackay pottery but Stanley Braced Rim ware, an historic Arikara pottery type. It is also, unlike Redbird Focus villages, a fortified site. There are a number of good explanations for the presence of the anomalous pottery (Howard 1970; Jantz 1974) and the other less diagnostic features do not conflict with a Redbird/Ponca identity, but, unfortunately, the site which should have proved the argument did not. The evidence in favor of the equivalence between Ponca and Redbird Focus appears to be slightly stronger than that against, and little has been done with the problem since Wood (1965) laid out the problem and summarized the evidence. Steve Holen (personal communication), however, has examined the Redbird materials and feels that a Pawnee identity is possible.

Village Sites in and Near the Project Area

The obvious problems of identifying and locating village sites for the Ponca should be discussed briefly before the list of relevant sites compiled by Howard (1970) is reviewed. The Ponca used the same area through time for different functions. The mouth of the Niobrara has been variously identified as a place where the Ponca had villages, planted corn, buried their dead, harvested wild fruits, carried on trade, made hay, and conducted the winter hunt. The extent to which the Ponca fragmented and scattered in small groups over the territory or combined into nucleated villages for either horticultural or hunting activities varied through time. The village on Bazile Creek appears to at times have been a nucleated earthlodge settlement, and at other times a scatter of small tent communities. The Ponca changed economic, and therefore residence, strategies not only seasonally, but also through time, as the opportunities and desirability of buffalo hunting on the high plains changed with the advent of the horse, the fur trade, game depletion, and intertribal conflict. By the 1830's, the earthlodge village may well have become a rarity among the Ponca who spent years at a time on the high plains in pursuit of buffalo. Villages in the area in the 1830's through the 1870's may well have been largely tent communities. With the scatter of the community and the mobility of the tent communities, the ability to determine whether two descriptions actually refer to the same settlement becomes difficult, increasingly so, when no time referent is included.

Howard in his description of thirty-three Ponca villages and landmarks is a "lumper;" if descriptions are similar, he places them in the same category. Six of the sites he discusses are in or near the project area. Howard notes two sites in the area of the mouth of the Niobrara. The first is the Grey Blanket Village which was west of the Niobrara, north of the railroad tracks, and according to Peter Le Claire has since been washed into the Missouri. This is probably also Point Village (BIA AR 1873: 239). While Howard lumps this site with the one described by DeSmet and others, it does not fit well with a village location three or four miles from the mouth of the Niobrara. There is also the abandoned village described by Lewis and Clark which indicates a protohistoric site inland from the Missouri. Peter Le Claire locates a village site at the mouth of Burgess Creek. He describes the site as "southwest of the town of Niobrara and near the river is a village where lots of Ponca died" (Howard 1970: 122). Howard's attempt to locate the site was unsuccessful as the area had been frequently flooded and heavily silted over. Standing Elk was born at a place known as Dead Tree or Chopped Tree village; it was between Niobrara and Bazile Creek, nearer Bazile Creek. He is the only one to mention the site and, given his age, occupancy would have been around 1833, a period in which the Ponca appear to have been highly mobile (Howard 1970: 122).

The Bazile Creek village or Xada de (Backing Water) Village is one of the best remembered of the Ponca village sites. It was

apparently first mentioned in 1785 by Miró. Brackenridge found the Ponca in the area in 1811, and Atkinson noted an earthlodge village here in 1826. Maximilian found a small tent community here and burials on the hills but declares the village abandoned. There was apparently continued, if sporadic, occupancy of the area. Yellow Horse (1912: 144) declares that he was born here about 1845. Standing Elk saw the village in 1847 (Howard 1974: 128), and Lucille Howe (1912: 177) remembers the village from her childhood in the mid-1850's. Warren in 1856 locates 64 lodges near the mouth of Bazile Creek. The graves in the area have already been noted as well as the character of the horticultural practices.

A village is also noted on the adjacent creek--Lost Creek.

Joe Birdhead describes it:

There were a few of them had an old camping ground on what the White People call "Loss Creek", and Godfrey a negro lived there. Near the mouth of that same creek he told me that there was another one of the old Ponca Chiefs buried on top of a high hill, and near this same place where those few camped (1912: 68).

Lucille Howe (1912: 177) lived here when she was around 12 or 13, about 1856-57. While the reference is vague, this small settlement was apparently contemporaneous with the one on Bazile Creek.

Finally, there are a number of references to a village called Zabe tie. Peter Le Claire describes the village: "At this village, on the east of the camp, was a big beaver dam across and there was lots of beavers were caught and shot. On the west side, across the Missouri river is a chalk rock bank and there is where the medicine men draw themselves on the chalk rock banks" (Howard 1970: 129).

He locates this village just east of Santee, Nebraska. Howard (1970: 129) believes that this is Cook's Creek area. Joe Birdhead (1912: 67), Bird Head, Yellow Horse, and Jack Penisky all mention Zabe tie by name. Bird Head (1912: 100) declares "a few had a village there on a creek here called Shabe te . . . it was between Santee Agency and Yankton City." When asked, "Was there any village between Bazile Creek and Zhabe te?" He replied, "No. Only there was a little creek below Santee Agency." Penisky (1912: 127) locates Zabe tie "On the other side of the Santee Agency." Yellow Horse (1912: 143) locates Zabe tie near Yankton and appears to suggest that the community near Santee was a different entity. None of this really contradicts or confirms the Cook's Creek hypothesis. The account of "Perry Winkle" (1858), discussed more fully in the Yankton section, should be mentioned here. The Indian village of "Tepiota," inhabited around 1852, is a potential candidate for Zabe tie. This is in the Wiegand or Beaver Creek area. While the site had scaffold burials, this may not conflict with Ponca practices at this late date. The Ponca were also hunting in Bon Homme County while at Zabe tie (Howard 1970: 130), so the flight of the residents of Tepeota across the river is also not in conflict with a Ponca settlement. The question will probably remain largely unsolved, for as Louis LeRoy (1912: 30) commented, there were a number of camping grounds between Santee Agency and Ponca City, most of which were never recorded.

Summary

The archeological remains of the Ponca in the project area will be of a number of distinct types. The earlier remains will be the traditional earthlodge dwellings typical of the Omaha and other groups. While the Ponca continued to construct these dwellings down to 1880, they increasingly adopted a lifestyle and its accoutrements that were typical of their Siouan neighbors to the north with whom they camped on the Plains, and with whom they occasionally formed villages on the Missouri, e.g., the Yankton. References are also made to small tent communities. The settlements were often scattered. There is reference to a main village, for example, at Bazile Creek, and scattered smaller settlements up and down the creek and on neighboring creeks, such as Lost Creek. The area has served not only as the place for horticultural activities and as a wintering ground, it has also been a place of religious ritual as indicated by the production of petroglyphs on the chalk rock bluffs. Long occupancy, diverse utilization, and culture change should have produced a diversity of cultural remains, but the mobility of the group, and then the adoption of the tent and the lack of truly unique artifactual remains (Wood 1965), will make these remains difficult to find and even more difficult to identify as distinctively Ponca.

THE YANKTON

Introduction

The Yankton arrived in the project area as a result of a complex chain of events started by the fur trade wars in the Great Lakes. The pressure initiated by these wars started a flow of peoples out of the forest-prairie areas onto the plains. The Yankton probably began exploiting the game resources of the northern shores of the Missouri by the early 1700's. Occasional encampments in the project area probably continued through to the reservation period starting 1858, and occasionally after. Actual documented villages in the area interestingly occur late in the pre-reservation period.

Traditional and Documentary History

Alexander Ramsey (1849: 1006) commented that Dakota historical traditions were short and obscure. At least part of the blame lies with the early recorders of these traditions who failed to accurately preserve this oral tradition. Much that is confusing about early Dakota history is a result of the indiscriminate combination of oral tradition and historical record to produce cohesive stories, but undocumentable and conflicting historical statements. Robinson (1956) and Hyde (1937) are excellent examples of this regrettable tactic.

The Dakota enter the historical stage with a visit from

Radisson and Groseilliers in 1660. This event occurred in northern Minnesota in the Mille Lacs area, generally considered to be the aboriginal home of the Dakota peoples (Meyer 1967: 1-6). The Yankton first appear as a separate entity in a Franquelin map which possibly dates from 1678-1679 and are located on a distorted rendition of the upper Mississippi (Howard 1972: 283). By the time of Le Sueur's entry into the upper Mississippi in 1700, the Yankton were probably dwelling in the area of the red pipestone quarries in southwestern Minnesota (M. Wedel 1974: 166). An Omaha tradition states that they were driven from the pipestone quarries by the Yankton (Dorsey 1884: 212; Howard 1972), suggesting the event occurred sometime shortly before 1700.

The time span between Le Sueur's visit to the upper Mississippi and Truteau's trip to the upper Missouri in 1794 is devoid of solid documentary evidence. This is unfortunate for a number of critical events occurred, or are said to have occurred, in this time span. The Sioux, including the Yankton, are generally credited with causing the expulsion of the Arikara from southern South Dakota by their slow western and southwestern expansion out of Minnesota. Hyde (1937:14) disagrees, suggesting that the Paduca, not the Sioux, propelled the Arikara north. In this westward drift the Teton, particularly the Brule, are thought to have preceded the Yankton into southern Dakota territory, but Howard (1970: 283, 285) suggests this to be a misinterpretation. He suggests a more northerly route for the Teton, putting them, using winter count data, west of the

Missouri by 1750.

Woolworth (1974: 33), using Robinson (1956: 56) and Short Ribs' speech of 1859 (Raynolds 1868: 20), places the gift of the James River country to the Yankton by the Teton into this time period, around 1765, suggesting the order of occupancy and the approximate date of the arrival of the Yankton on the northern shores of the Missouri. The whole story of the Yankton defeat by the Oto, the gift of the James River country, and the date of 1765 suffer, as 1) the accounts are not themselves dated, 2) their sources are questionable, and 3) there is no intrinsic reason to connect the battle with the Oto with the Yankton movement to the James. The circumstances and timing of the Yankton movement to the James Valley are thus still in question. Finally, in this period, ca. 1750, the Sioux are said to have obtained horses and begun to seriously use them by 1775 (Secoy 1953). The horse was critical for the development of the new plains lifestyle. In short, critical population shifts and technological changes have already occurred during the period for which there are no historical records.

After ninety years of little information, in rapid succession three exploring expeditions passed through the area. Truteau, in August 1794, came upon a small party of Yankton hunting on the Missouri well north of the White River. He comments that their customary home is on the upper Des Moines River and that their traders were used to visiting them there (Nasatir 1952: 2670268). Faribault (Sibley 1880) traded with them on the Des Moines River between

1800-04. Tabeau operating in the area (1802-04) located the Yankton on the James River and hunting the northern banks of the Missouri (Woolworth 1974: 40). Lewis and Clark also met the Yankton at the mouth of the James (Lewis and Clark 1904/05, 1: 128-130). The unsubstantiated but popular story of Strike-the-Ree's birth supposedly occurred at this time (Robinson 1956: 70). Lewis and Clark also contacted the Yankton on their way down the river. There were 80 lodges camped on Plum Creek (Lewis and Clark 1904/05, 5: 372). Mattison (1956: 26) identified this creek as Emanuel Creek. Lewis (1806: 713) suggested that either Council Bluffs or the mouth of the Cheyenne would be convenient trading locations for the Yankton, thus indicating something of their range of operation on the Missouri.

A number of trends are obvious in Yankton migration patterns of the next forty years: 1) the gradual abandonment of the upper Des Moines settlements; 2) the establishment and gradual decline of the Vermillion and Big Sioux River settlements; 3) the early and late activities around the mouth of the James, coupled with the continued importance of the James River Valley in Yankton affairs; 4) the increasing appearance of bands of Santee and mixed bands of Santee and Yankton in the area; 5) the increased activity west of the Missouri.

The Yankton had been associated with the southwestern corner of Minnesota and northwestern Iowa since the time of Le Sueur. Their association with the Des Moines in the early 19th century is confirmed by the issuance of trading licenses and other official

interaction with the government (Woolworth 1974: 56-57). Increasing pressure from the Sac and Fox was changing this. John Dougherty reported, "the Yankton Sioux known by the name of the Little Dishes bands was driven by the Sacks and Foxes in 1813 from the Des Moines river, and took refuge. . . with the Omahaws" (Woolworth 1974: 63). The flight was evidently temporary for there are references to the Yankton on the Des Moines in the 1820's (Woolworth 1974: 89, 93). Taliferro believed the Yankton had finally abandoned the Des Moines River in 1833, and in a treaty in 1837 the remainder of the lands in northwestern Iowa were ceded. Occasional hunting parties still frequented the area.

The location of villages in the Big Sioux and Vermillion River valleys, long familiar Yankton hunting territory, probably resulted in part because of the westward push of the Sac and Fox, forcing abandonment of the Des Moines. This factor coincided with the southward retreat of the Omaha and the southwestward drift of the Santee Sioux. Random references to Sioux villages in this area begin with Long's map in 1823, which placed a Yankton village between the Floyd and Big Sioux Rivers (James 1905). An 1829 Tanner map shows "Yankton villages between the James and Vermillion rivers, near their mouths, and on both sides of the Big Sioux river at its mouth" (Woolworth 1944: 94). Another reference places a village at the mouth of the Big Sioux just prior to 1841 (Riggs 1841: 181). Dixon in 1830 established a trading post in the vicinity of the Vermillion River and War Eagle, a Santee, who succeeded to the head of Little Dishes band of Yankton, settled near the post

(Marks 1908: 264). The encampment contained roughly 20 families in 1837 (Woolworth 1974: 96). Culbertson (1952: 36) in 1850 noted 60 lodges of Santee and 25 Yankton lodges. Larpenteur (1898, 1: 289-290) witnessed the abandonment of the Vermillion River settlement in 1850 and its removal to the Sioux City area, forming a community of Yankton, Santee, and mixed bloods of French-Canadian ancestry (Howard 1972: 297). There was another Vermillion village after the 1849 move of Brugier's Vermillion Post. "Another band, under 'Mad Bull,' had a permanent camp in the Vermillion, and there were two bands whose local habitation were on the Big Sioux and in the Valley of Brule Creek" (Kingsbury 1915: 116; BIA AR 1859: 491). Howard (1972: 289) suggests that the Vermillion River was a major village site from 1835 to the Reservation period. Both Hank Spotted Eagle and Hazel Ashes (see Native American Informants section) mention settlements around Sioux Point, now Elk Point, S. D., which may have dated from the 1850's (see also Howard 1972: 297). The Indian agent (BIA AR 1858: 411) described a Yankton village north of the mouth of the Big Sioux in the summer of 1857 which contained "about one hundred lodges of the Yanktons" that may have been part of the old Vermillion River settlement (but see Howard 1972: 296). There is a good deal of conflicting evidence about the placement, contemporaneity, importance, and longevity of these settlements. These settlements were now also on the edge of the frontier and were taking on the characteristics typical of communities in this position. They consisted of a conglomeration of different tribes, mixed bloods, and

old fur trade employees. Occasionally included in this mix were the renegade and predatory bands which preyed on the frontier edge (Denig 1961: 39).

The James River Valley is mentioned frequently in the early part of the 19th century in connection with the Yankton. Villages near the mouth of the James are mentioned in 1803 and 1809 (Woolworth 1974: 68), and numerous references are made to the mouth of the river as a point of trade. While the James is almost inevitably mentioned in defining Yankton territory and there are occasional references to Yankton hunting parties in the James Valley, the location of the tribal encampments after 1809 is generally either around Ft. Lookout or the Vermillion and Big Sioux Rivers. The majority of the tribe apparently centered in the more westerly location. In the late 1850's a part of the Yankton, referred to as the Lower Yankton, returned to the James River area. The first mention of Smutty Bear's village occurs in 1855; Strike-the-Ree's village was on the present townsite of Yankton by 1856. Kingsbury adds:

There was also a camp of the Yanktons on the east side of the James River near the present wagon bridge. This was the band under the command of 'Feather-in-the-Ear,' a redoubtable Yankton . . . 'Rain-in-the-Face' was located at Emanuel Creek . . ." (1915: 116).

There appears to be first a decline in activity in the vicinity of the James and then a return to the river valley. Much of the original activity noted around the James was connected with the trade fair held on the river annually from around 1795 to around

1832 (Woolworth 1974: 52). The steady movement of European and American traders up river with increasing trade at the Bijou Hills, Ft. Lookout, and Ft. Pierre must have caused the center of trade to shift slowly westward. The buffalo were also disappearing from the area east of the Missouri (Denig 1961: 36).

With the shift in trade and resources west, probably beginning in the 1810's and culminating in the 1840's, the shift of the bulk of the Yankton west is understandable. Woolworth adds, "It is highly probable that the Yanktons had crossed the Missouri to the White River following the withdrawal of the Brule Sioux from that region. The latter appear to have removed north and west of the White River about 1822" (1974: 116). As late as 1855 the main village of the Yankton was located 30 miles above the Niobrara on the northeast of the Missouri (BIA AR 1855: 391). This was Strike-the-Ree's village.

A number of motivations may have brought about the eastward placement of villages in the last years before treaty negotiations in 1855 again forced a westward retreat. The Indian agent himself apparently believed that the valley south of the Dorian Bluffs area was well suited for agriculture and apparently was pushing it as a Yankton reserve (BIA AR 1857: 405). The increasing warfare on the buffalo ranges may have increased the desire to try farming and exploit the smaller game resources of the James and Missouri River valleys. With the knowledge of a coming treaty a demonstration of "occupancy" of the land to be sold might well have been the

"politic" move. Smutty Bear in the 1850's made several tactical moves to halt settlement west of the Big Sioux (Robinson 1956: 245; Anonymous 1890-91: 59).

The treaty of 1858 created a reservation of 400,000 acres for the Yankton beginning west of Choteau Creek and by 1860, the Yankton had moved onto the reservation.

Economy

As already noted, the territory occupied by the Yankton through their history made a gradual westward and southwestward progression from the woodland of northern Minnesota until in the 1830's and 1840's large parties of Yankton were hunting west of the Missouri. In the late 18th and early 19th centuries the focus of activity seemed to be the upper Des Moines, Big Sioux, and James River valleys, with small parties hunting west of the Missouri. By 1837 the Indian Agent Pilcher defined their hunting domain as follows:

The Yankton hunt through the country from the mouth of the White River, to its sources in the Black Hills, and south as far as Liauquecoure (Niobrara) river up the same, for say 250 miles, and thence still further south to the north fork of the great river Platte, and up that fork to the Black Hills or Platte mountains; a part of the Teton sometimes hunt with them . . . (Woolworth 1974: 113).

De Smith comments on the Yankton and Santee bands in 1847: "[They] are now trespassing on the hunting grounds of the Brule's for I met them last October (1847) on the headwaters of l'Eau qui Court (Niobrara River) and of the White River" (Woolworth 1974: 145).

They generally stayed south of Fort Pierre, the Yanktonai occupying the territory to the north (Denig 1961: 36). Howard gives a good brief description of the subsistence base:

The economy of the Middle Dakota, like that of other Missouri River groups, rested upon a base of hunting, fishing, gathering, and river bottom horticulture. Great tribal bison hunts took place twice a year, in midsummer and late fall. . . These hunts often took both groups far west of the Missouri. The Yankton also made periodic trips to the Black Hills of South Dakota to secure tipi poles. Bison, elk, deer, and antelope were hunted throughout the year by individuals and small groups, but this sort of hunting was done closer to the home villages, and east of the Missouri . . . The gathering of tipsina, chokecherries, and other wild foods was also important to the Middle Dakota. Horticulture was practiced by the women of the two bands, who raised at least three varieties of corn, two varieties of squash and at least three varieties of beans . . . (1966: 1-2).

The extent of the horticultural proclivities of the Yankton is a matter of debate. Howard (1966: 2) believes they have a pre-historic base while others declare the Dakota non-horticultural before their move from northern Minnesota (M. Wedel 1974: 165). There are statements throughout the pre-reservation period attesting to the non-agricultural propensities of the Yankton, but others describe their horticultural endeavors (Woolworth 1974: 205-206). The descriptions, however, are often not enthusiastic, and tend to mention groups that are more easterly, e.g., those on the Des Moines prior to 1813 (Woolworth 1974: 41), and groups later in time. Pilcher states of the newly formed Vermillion River community in 1836, "20 families of Yankton and Santees have made for the first time an attempt at cultivating small spots at such places as caprice would select for them" (Woolworth 1974: 112). In 1853, Vaughan describes

the bands as:

cultivating the soil to a limited extent . . . the extreme severity of the weather, last winter prevented them from leaving their homes in quest of buffalo, their range being a long distance off. Their condition is not quite so bad at present, there being an abundance of wild vegetables and fruit, upon which they subsist in the absence of game (BIA AR 1853: 112-113).

Again in 1856 Vaughan commented that the Yankton "subsist for the greater part of the year on roots such as the 'Prairie turnip'" but have planted "a large number of small fields of corn, pumpkins and beans" (Woolworth 1974: 175). Agriculture certainly appears to be a secondary concern forced by ecological, military, and political necessity.

Both the High Plains nomadic culture and the more settled Plains Village pattern relied on firearms, the horse, and the fur trade, all of which altered the prehistoric patterns of life. One quarter of the buffalo killed entered the fur trade directly, while meat and other by-products were used in provisioning the traders, trappers, and transporters. A plethora of other hides and peltries came from the Missouri into the trade, all largely supplied by the Indian (Wishart 1979: 96).

The trade stimulated not only Euro-Indian interaction but intensified and created new inter-tribal trading patterns. The changing trading relations between the different Dakota bands and the Arikara and Mandan are a good example (Jablow 1951). The James River trade for which different Dakota groups from west of the Missouri and the Santee of the Mississippi met to exchange

goods lasted to 1830, and made the mouth of the James a focal point for European traders. Horses and buffalo hides coming from the west crossed with rifles and more abundant European goods coming from the Upper Mississippi (Blakeslee 1975; Ewers 1954; Woolworth 1974).

Social Organization

While early estimates of Yankton population vary widely, most cluster around 250 and 350 lodges with roughly 2500 to 3500 souls (Woolworth 1974: 227). This large aggregation was probably seldom together as a unit except at the summer trade fairs and to receive their annuities payments. More often they were divided into small hunting bands scattered over the country (Howard 1972). Between these small hunting groups and the larger tribal entity, there appears to have existed an intermediate band identity of longer duration than the hunting unit, but less stable than the tribal entity. Lewis (1806: 715) identified two bands of Yankton each headed by a chief. By the 1830's and 1840's, the Yankton were divided into upper and lower divisions (Howard 1972: 289). Culbertson (1952) lists three bands in 1851. Dorsey (1893/94) gives a list of seven or eight bands, depending on whether the mixed bloods are included. He mistakenly called these "gentes" which became part of the long standing dispute about clans among the Dakota (Stipe 1971). Howard believes that Yankton originally had "exogamous, localized, patrilineal village groups," similar to the Santee which evolved into the "loose bands of historic times" (1979: 138). While the

position of chief tended to run in family lines and the chiefs or headmen appear to have been ranked, ability made the difference as Denig's account of the Yankton chief, Iowa, indicated (Denig 1961: 37-38).

Villages

Howard (1966) distinguishes three different dwellings used by the Middle Dakota: 1) the skin tipi, 2) the skin covered wikiup (generally used only by poor families), and 3) the earthlodge. While Howard doubts whether the Yankton used the earthlodge, there is a reference to the earthlodges in Smutty Bear's village (BIA AR 1858: 412). The skin tipi was the most prevalent form of dwelling (Bushnell 1922). The size of the encampments seems quite variable from the ten tents seen by Maximilian at Ft. Lookout (Wied-Neuwied 1906, 22: 304), the 80 to 100 lodges of the Vermillion encampment, to the hundreds of lodges gathered about the trading post preparatory to the westward movement into the high plains.

Burials

The best description of the Yankton method of burial is given by Maximilian during his stay at Ft. Lookout:

A little further up the river we saw, on the hills, some burying-places of the Sioux Indians; most of them were formed on a high platform, on four stakes, on which the corpse, sewn up in skins, lies at full length; others consisted of stakes and brushwood, like a kind of hedge, in the middle of which the deceased is buried in the ground (Wied-Neuwied 1906, 22: 303).

The scaffold burial was evidently the most typical (Howard 1966). Sometimes the scaffold burials were later reinterred (Bushnell 1927; Karolevitz 1972: 4).

Village Sites In and Near the Project Area

Starting north of the project area, the Yankton had a permanent village at the mouth of Choteau Creek. It was a village of the Bad nation band and possibly a mixed Yankton/Ponca village (Howard 1972: 295). Hazel Ashes and Hank Spotted Eagle both mention this village. (These informants viewed the villages along the Missouri in an historic progression indicative of the westward movement of the Yankton, Choteau Creek village being the last before the move to Greenwood [see Native American Informants Section]). Howard gives no dates for this village. He also makes a brief note of the Niobrara river mouth area as a good source of kinnikinnick, a smoking additive.

Howard (1972: 295) notes a bit of folklore associated with Emanuel Creek, but mentions no village site. Hazel Ashes, however, declares that the Yankton had a village on Emanuel Creek, and Kingsbury (1915: 116) says that Rain-in-the-Face's village was on Emanuel Creek. Any dating of the village is difficult, although the 1850's would be a reasonable assumption. Unfortunately, the historical record does not provide a more accurate site location. One of the creeks, possibly Emanuel Creek, would be the Plum Creek on which the Yankton had 80 lodges in 1806 when Lewis and Clark were

making their return voyage.

Smutty Bear's village has a prominent place in the literature, as it is often mentioned in the early historical records. The village, along with the one at the present site of Yankton, may be a relative late-comer to the area. The first mention of Smutty Bear's village comes from Cumming's report in 1855, of his trip up the Missouri. The village is located at Derroway Bluffs. In later reports, this becomes Dorian's Bluffs, and the description locates it upriver from the James River. Warren's manuscript map dating 1856 places Smutty Bear's Camp 13.5 miles west of the James, roughly the Gavin's Point area. Agent Redfield (BIA AR 1858: 412) gives the following description of the Smutty Bear village:

They even now can be said to have nearly passed from the nomadic to the settled state, as they reside chiefly in fixed habitations, mostly earth lodges, though I also observed some quite good log-houses at the village of the "Smutty Bear."

In 1858 "Perry Winkle" describes the village from the vantage point of a hill near Tepiota:

the cabins and tepis you see just across the river are at old Smutty Bear's camp, and those large, round looking buildings made of poles and dirt are the places used for storing away their corn and provisions. The Indians of old Smutty's tribe often come to see us . . . ("Perry Winkle" 1858).

In fact, S. Loeber started Frankfort, Nebraska, just east of Wiegand Creek, to trade with Smutty Bear's village (Draper 1876). One final reference to the village should be discussed. Pruitt (1953: 544) claims that a Sergeant Haas "bought the land on which Smutty Bear had a village . . . A four-mile long canyon leads north from

the Missouri river, known as the Smutty Bear Bottoms. At the head of the canyon stands the modest home of the old sergeant." The reference is not clear and much of the text is muddled. However, a Frank Hass did purchase, in 1879, 160 acres in the SE $\frac{1}{4}$ of Sec. 22, T94, R57, which is roughly five miles straight north of Gavin's Point. All evidence, however, points to a village on the banks of the Missouri, not inland. Howard believes the Smutty Bear village to be the archeological site (39YK203). "In 1963 and 1964, Robert Gant and I made surface collection at the site, which has since been completely destroyed by wave action" (Howard 1972: 296).

Hall (n.d.) excavated at this site and recovered materials indicative of an historic Indian village, including a portion of what appears to have been a pipemaker's lodge.

The Indian village on the south side of the river located by "Perry Winkle" a little way up the river from Tepiota, may be an abandoned Yankton village (see Ponca section for the other likely possibility):

Upon the ground on which we are now standing, less than half a dozen years ago, was a large Indian village called Tepiota, and was, as its name signifies "a place of many tents." . . . They all removed across the river, and were soon scattered in small bands all over the country; but they often return and sit with sorrowful countenances for hours upon that little mound near the creek; apparently absorbed in the recollections of the past, and to visit their dead brothers you see lying on these scaffolds made of poles, near the grove on the Hill. ("Perry Winkle" 1858).

The time frame, around 1852, makes the most likely inhabitants either Ponca or Yankton. The scaffold burials and the movement of the

inhabitants north across the river are more indicative of Yankton practices, but are not unreasonable for the Ponca. The name "Tepiota" is also of Dakota derivation, but as the site name would come to Perry Winkle's friend through Smutty Bear's camp followers, this is not definitive either.

The final village site is that of Strikes-the-Ree's village, just a few miles downstream from the project area. While the time span of Smutty Bear's village may only be estimated roughly as 1855 to 1859, Strikes-the-Ree's settlement is more accurately dated. Vaughan (BIA AR 1855: 391) finds the principal village of the Yankton in June 1855 at Handy's Point, 30 miles above the Niobrara. Cumming's letter (1855: 2) in February 1855 implies that the village he had visited with Vaughan in June was now abandoned. Warren's manuscript map of 1856 located a Yankton encampment 7-2/3 miles from the James, roughly the site of the present city of Yankton. In 1857 (BIA AR 1857: 412) this settlement is identified as Strike-the-Ree's village. The camp has been described by an early Yankton pioneer:

Their camp, he recalled lay in a rough circle, the tepees standing along the base of the bluffs to the west and north, extending southward to the Missouri in the vicinity of what became Capitol Street landing and then west along the river to the foot of the hill where Pierre Dorion Jr. (an earlier white visitor to the area) reputedly lay buried (Karolevitz 1972: 3-4; see also p. 7 and a contemporary sketch of the village on p. 10).

The villages were all removed to the reservation by 1859 (BIA AR 1859: 489-490).

Summary

The exact sequence of events that surrounded the Yankton move into the project area is unknown. Whether they were preceded by the Brule or whether the area was granted to them by the Teton has not been determined. They were found hunting on the north side of the Missouri in the 1790's and 1800's. They had encampments on the James and on Plum Creek when Lewis and Clark passed through. The James was generally regarded as their territory, although they were drifting westward and hunting beyond the Missouri in the 1830's. Game depletion and military turmoil forced them back toward the Missouri and toward greater horticultural efforts. The Yankton returned eastward to the project area in the 1850's setting up villages of tents, earthlodges, and log cabins, and farming the surrounding ground. Villages or encampments were on Choteau Creek, Emanuel Creek, Gavin's Point, at the site of the city of Yankton, and on the James. The Indian village at Tepiota may also have been a Yankton village. One hundred years of Yankton use and occupancy of the shores of the Missouri, in and around the project area, should have left the more ephemeral remains of hunting camps and the later more permanent remains of horticultural villages.

SANTEE

Introduction

The Indian groups who previously inhabited the research area were moved to reservations located elsewhere. The Santee Sioux, in turn, entered the project area as a consequence of their removal from Minnesota, following the Sioux Outbreak of 1862. After assorted misadventures, including incarceration at an Army barracks near Davenport, Iowa, and a disastrous stay on the Crow Creek reservation, the fragments of the Santee Sioux were reunited at Niobrara, a reservation established by executive order in 1866. Reservation boundaries were finally established in 1869 and encompassed 115,076 acres (Meyer 1967: 163).

The Santee arrived at Niobrara from Crow Creek and Davenport in the spring of 1866 and were housed in buildings at the old town-site of Niobrara. In the fall, the agency and the Santee were moved to a place near the mouth of Bazile Creek. Local tradition puts this at Maiden's Leap, named after the Minnesota site. A temporary agency was constructed:

. . . various buildings, including warehouses, sleeping quarters for the employees, an agency office, a blacksmith shop, and an interpreter's house, were erected before cold weather set in. All the buildings were one story, sod-roofed affairs of logs, intended for only temporary occupancy. The missionaries built their own houses, of the same materials and much the same construction (Meyer 1967: 158).

In the spring of 1867, the agency was moved again because timber along Bazile Creek was exhausted. The agency was relocated at the Breckenridge timber, roughly its present location. The adjacent

bottomlands produced an excellent stand of hay for the agency livestock. With this move, the agency settled in and reservation patterns began to evolve.

Population History

Population figures for American Indian groups are always problematic because of definitional problems. Mixed bloods and off-reservation Indians may or may not be included, and one count may be made by a census taker applying his definition of "Indian" while the next may enumerate self-identified Indians. These problems may well affect the figures presented here.

The total population on the Santee reservation in 1866-67 was 1,350. BIA figures show a consistent downward trend after this date until a nadir is reached in 1880, at 736 individuals. In 1869, approximately 240 individuals left Santee to form the Flandreau Colony in Minnesota. In 1873, between 70 and 85 individuals died in a smallpox epidemic. There appears also to be a steady out-migration during this time to Minnesota and other localities. From 1880 there was an upward trend in population, and it reached a peak of 1,165 in 1920. Then the Santee population again began to disperse, and the scattered figures found after 1920 show a declining population as the Santee assimilated with the surrounding population or sought opportunities beyond the confines of Knox County. Meyer (1967: 312-313) describes the exodus during the 1940's and 1950's as a virtual abandonment of the reservation. The 1970 decennial census estimates

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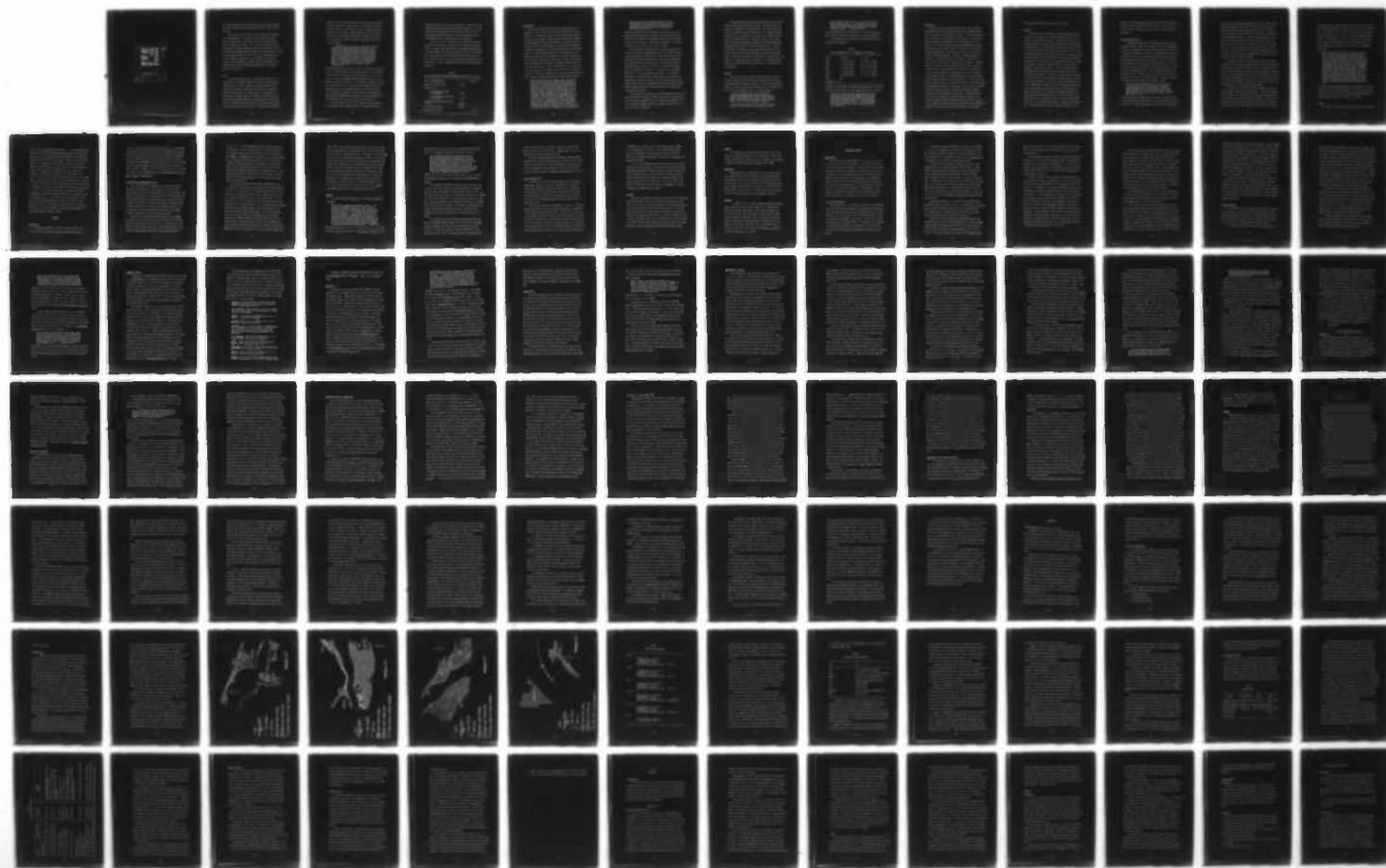
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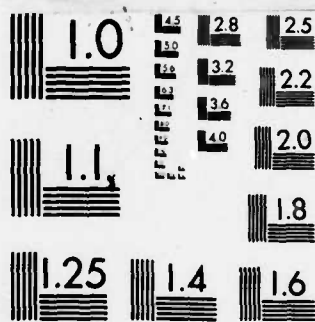
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the Indian population of all of Knox County at 263, while BIA estimates of the Santee subagency population are 357 for 1973, and 425 for 1976.

The major factor affecting the Santee population of Nebraska has been outmigration. Except for the 1873 smallpox epidemic, vital statistics kept by the agency show a small but consistent excess of births over deaths. The 30 to 40 year period of growth from 1880 to circa 1920 represents that time in reservation history of the "closed" community when migration and "visiting" could be most closely regulated (BIA 1891: 295). The slow increase during this time is largely accounted for by natural growth. But with the changing role of government, changing economic opportunities, and a deteriorating land base, outmigration again led to a declining reservation population.

Land

The greatest single issue of confrontation between the U. S. government and the American Indian has been that of the ownership, control, and use of land. Symbolic of the Euro-American system was private ownership of land, while tribal usufruct marked the American Indian system. For varied reasons, the government and Christian reform groups pushed for ownership of land in severalty while Indians sometimes fought and sometimes eagerly accepted the system. The Santee reservation mirrored the larger national trends in the allotment of land in severalty. Allotment actually began at

Santee in 1870. Agent Janney reports: "We have had 200 farms of 80 acres, and 200 of 40 acres laid off by a surveyor, 90 of which have been taken." By 1872 lands had been "alloted in severalty to over 200" (BIA 1872: 26). Legal problems with land titles arose and were not settled until the passage of the general allotment act, the Dawes Act of 1884. Agent Hill describes the affect of the law at Santee:

. . . 69,099.46 acres allotted to Indians, 492.60 acres retained for agency and government industrial school, 480 acres for American Missionary Association, and 158.10 acres to Protestant Episcopal Mission making a total of 70,230.16 allotted to and held by Indians and retained for agency, school and missionary purposes. The allotments were selected by the Indians with the assistance of the agent. In most cases the best lands were secured, but not all adjoining each other . . . a portion (44,770 acres) of the Santee Reservation was restored to the public domain . . . (BIA 1886: 189).

By the application of the Dawes Act, 39% of the original reservation was left in Santee hands, with the stipulation that the land given in severalty to the Indians could not be alienated or sold for 25 years. The size of allotments varied according to age, sex, and marital status (Otis 1973: 107). One unforeseen consequence of this was that land was held by a large number of people who could not make direct use of it, leading to pressure to lease or sell the land. Similarly, inheritance of equal shares in the property of a dead person so complicated the ownership of trust allotments that the simplest way to put the land into use was to sell it.

By 1919, roughly a third of the originally allotted land had been sold under lands allowing the agent to oversee the sale of

inherited lands and the land of "incompetents." Also by 1919, the process of issuing fees in patent was nearing completion. A total of 581 patents were issued covering 43,078.8 acres, yet only 91 Santee were holding trust patents. Thus the government rapidly disencumbered itself of responsibility of Indian lands.

While the sale of the land held in fee simple by the Santee is difficult to determine, toward the end of our period of study (1919), it appears that only 29,895 acres remained in Indian hands. According to Meyer, this figure was reduced to 6,162 by 1962 (1964: 94). Thus, over 80% of the reservation was alienated in the 35 year period from 1885 to 1920, and another 14% was alienated in the next 40 years. Table 1 summarizes the loss of the Santee lands in Knox County.

TABLE 1

LAND ALIENATION FROM THE SANTEE RESERVATION, 1869-1962 (in acres)

Land in 1969 Reservation	115,076
Returned to Public Domain	44,770
Losses by 1919:	
Sold by Agent for heirs, "incompetents"	25,160
Sold by Indians holding land in fee simple	23,120
Additional losses by 1962 from all causes	<u>15,823</u>
Total Losses 1869-1962	108,873
Remaining Lands, 1962	6,162

Agriculture

One of the reasons why the issue of land ownership was so important is that it lay at the root of the reforms' goal for the Indian, i.e., Civilization, which in this instance meant turning the Indian into a farmer. Toward this end, model agency farms were created, gristmills erected, and machinery, seed, and instruction were all offered in varying amounts. This goal produced regular, if varying, assessments of the agricultural potential of the reservation. In 1866, emphasis was placed on the suitability of the Missouri and Niobrara river bottoms for the growth of maize, potatoes, and other root crops (BIA 1866: 243). In 1874, the reservation was assessed as consisting of one-quarter tillable land, the rest good for grazing. In 1878, a large majority of the land was seen as suitable only for grazing, while the terraces along and at the head of tributary streams were rated as good cropland (BIA 1878: 99). Finally, an 1890 description of the reservation reported:

About three-fourths of this agency lies on very rough and rocky territory where it would seem to me that it would be very hard for any one to live depending upon agriculture. The soil in some cases is fair and even good, but the hills are very abrupt and so steep in many cases that a horse can not climb them. The valleys or gulches are narrow in most instances, so that to find a field containing 10 acres to plow is an exception. About one-eighth of the reservation is on the Missouri River bottom and of remarkably rich soil. It lies low and is subject to overflow. Very little of this land is in cultivation, being used for hay land. There is a sparse growth of timber over some parts, but it has been mostly cut out. Nearly all of the dwellings built on the bottom are very close to the bluffs so that the inhabitants can get to the hills in case of an overflow. The balance of the reserve is

along the Bazile and Mini Waste Creeks and is rich soil laying in a valley from one-fourth to one-half mile wide and the finest land on the reservation. Along these streams there is more prosperity among the people (BIA 1890: 141).

In 1902, the agent noted that 10 miles to the south was in a prosperous farming community, while another 5 miles to the east was to be moved, as the Indians were abandoning this section of the reservation as a "bad location." Agricultural settlement thus was along the Missouri and to the south on the major creeks.

The early goal of the agency was to create a self-sufficient farmer, but the early reservation years were not favorable for agriculture; grasshoppers took the crops in 1866, 1867, and 1872, and drought did the same in 1870 and 1874. While wheat was emphasized early (Meyer 1964) and the plurality of the agricultural land was probably planted in wheat in the 1870's, corn became the leading crop in the 1880's with roughly 40 to 50 percent of the cropland devoted to it. Oats also gained in popularity. In the 1880's, the Santee were indeed largely self-sufficient, using modern farm machinery and raising corn, wheat, oats, and potatoes, with cattle, horses, swine, and poultry contributing to the mixed farming economy. Severe droughts from 1890 to 1895 destroyed most of these gains in farming self-sufficiency.

The acreage under cultivation by the Santee hovered around 4,000 acres for most of the 1880's and 1890's. How much of the produce was sold and how much consumed locally, is difficult to determine. However, the agent estimated in 1913 that roughly 40 percent of the crop was for home consumption.

The major agricultural issue from the mid-1890's to the 1920's revolved around the lease and sale of land. The latter issue has already been discussed. As already noted, the allotment system put land in the hands of individuals unable to use it; leasing was one response to this. The severe crop failures of the 1890's probably also were an added incentive, as leasing provided a sure income. While the agents were generally opposed to the leasing system, one begrudgingly admitted that "it pays" (BIA 1904: 239). A total of 17,735 acres in farming and grazing lands were leased out in 1917, roughly 60 percent of the land estimated to be held by individual Santee. About half were grazing leases and half in agricultural land. There was a tendency for excess cropland to be lost through sale; therefore, as time progressed, leases tended to deal primarily with grazing lands.

Housing

With the land owned in severalty and the Indian cultivating the land in wheat, corn, and potatoes, the capstone to the picture of civilization was a house on the land. It was not only a positive symbol to reforms but also meant the demise of the "village" way of life. The agent commented in 1877 on this progression:

The first settlement here was a disconnected village, the houses of which were built of logs and ground, and roofed with sod - many of them living in tents. They lived here for several years, depending almost entirely on the Government for support.

About eight years ago they were induced by the persuasions of their agent and missionaries, to leave

their village and build houses on the farms which have been allotted to them . . . At present, out of the one hundred and fifty-three houses occupied by the Indians fifty have shingle roofs and the greater part of them have board floors . . . (BIA 1877: 147).

The housing boom must have proceeded fairly rapidly, because the agent reported in 1869 that the Santee had only 95 log houses.

The government also constructed houses for the Santee as the following table indicates:

TABLE 2
HOUSES CONSTRUCTED BY THE GOVERNMENT FOR THE SANTEE

1883	50 houses	14' x 28'
1887	26 frame houses	16' x 26' (3 rooms)
1888	20 frame houses	16' x 26' (3 rooms)
1889	25 frame houses	16' x 26' (3 rooms)
1894	10 frame houses	16' x 26' (3 rooms)
1896	<u>10</u> frame houses	16' x 26' (3 rooms)
TOTAL	141	
<hr/>		
	30 barns 16' x 30'	

The agent is quite explicit that the houses were built on the allotments and by Santee labor. The 1892 description of the situation:

Nearly all of the Santee are supplied with small but comfortable frame houses that have been issued them from time to time by the Government, and the larger part of them have neat frame stables and granaries provided from the same source . . . All are supplied with stoves, and nearly all with the ordinary household articles, such as bedstead, cupboards, tables, etc. (1892: 311).

The Agency

While the focus of government Indian policy was to create an independent farmer, the services provided to the independent farmer fell on the agency and the missionary society. This was necessitated in part because of the isolation of the reservation. Services, however, were sometimes inappropriate to the size and nature of the community. The agency probably reached its maximum size and extension of services in the early 1880's. An 1883 list of agency buildings gives some idea of the structure and function of the agency: 2 school buildings (combined), 4 stables, 9 dwellings (frame, log, and brick), 2 gristmills (frame and chalkstone), 5 workshops, 1 council house, 2 warehouses, 1 machine house, 1 sawmill, 1 slaughter house, 1 ice house, 1 jail, 1 physician's office, and 2 granaries (BIA 1883: 108). The chalkstone mill 10 miles from the agency run by water power had already been abandoned and a new steam-powered one constructed. Three of the workshops probably were the carpenter shop, the blacksmith shop, and the harness shop. The labor and skill in these shops was provided largely by the Santee. While some changes and modernization occurred at the agency, the real growth in physical plants after the early 1880's occurred in the school buildings, reflecting changes in emphasis of BIA policy. The discontinuance of the agency, considered before 1900, became a reality in 1917, and the crumbling buildings were sold at auction in 1926. "Except for the campus of the Santee Normal Training School and the Episcopal Mission, the auction left the old Santee Agency a virtual ghost

town" (Meyer 1967: 304-305; see also Anonymous 1924).

Schools

Education was long an element in the government and mission program for the Indian, and it became a dominant theme after the issue of the allotment was settled. Schools were run both by the government directly and by the mission society with various amounts of government aid. The missionaries started school almost as soon as the Santee settled on the reservation (BIA 1867: 293). By 1875, the Episcopal Mission was operating three schools, the American Board of Commissioners for Foreign Missions (later the American Missions Association) had two schools, and the government operated a "Manual Labor School." By 1879, the American Board had their schools combined into one boarding school. In 1884, fire destroyed the Episcopal school, and henceforward they used the Hope School in Springfield, South Dakota. By 1885, the American Missions Association School, known as the Santee Normal Training School, contained 18 buildings, averaged 114 students and taught "blacksmithing, carpentry, shoemaking, brickmaking, farming, attending to horses and cattle, also sewing, cooking, laundry work, and housekeeping in general" (BIA 1885: 138). In 1894, the government subsidy to the Santee Normal Training School was cut, a blow from which it never really recovered. It apparently closed its doors in 1936 (Meyer 1967: 312). The government school began to expand its facilities in 1887. Fires destroyed the school in 1888 and in 1895, but more

substantial structures followed in each case. By 1902, the government was already contracting with area schools to accept Santee children. Even in education, the period of the closed reservation was ending.

Political Organization

The political organization of the Santee changed during the reservation period. Meyer (1967: 153-154) noted that the important division of the Mdewakanton into seven bands survived the reservation period in Minnesota, 1853-1862, but disappeared after the move to Nebraska. The role of hereditary chief survived for a while at Nebraska although there was clear opposition. One of the reasons for the departure of the Flandreau Colony was dissatisfaction with the role and power of the hereditary chief (Meyer 1967: 243). With the death of Wabashaw (BIA 1877: 148), the Santee changed over to elected officials. In 1874, a court of law and a police force of six men and one chief of police was started. An excellent summary of the whole system was given at its height in 1885:

The tribe now elect councilors each year as the headmen of the tribe, who serve two years. They have eight councilors; elect four each year. These eight men are supposed to act as auxiliaries to assist the agent and give wise council to their people. We also have a police force, and the "court of Indian offenses" (BIA 1885: 137-138).

The phrase "assist the agent" should be noted; the implication for the lines of power are undoubtedly real. The system was part of the mentality of a "closed" reservation and soon ran into trouble with

county, state, and federal governments, none of whom cared for self-sufficient fiefdoms in their midst. The police and courts, much against the agent's wishes, were abolished in 1890. In 1894, the Santee reorganized to fit with the legal and political framework of the surrounding communities. "Santee is under municipal organization, and Santee precinct elects her own precinct officers. We have two justices of the peace. Before one of these, all offenses are tried. The cases are mostly drunkenness and adultery" (BIA 1894: 193). Santee political structure again changed as they voted in 1934 to accept the Indian reorganization act and drew up a constitution and bylaws (Meyer 1967: 308).

The extent to which the Santee accepted the cultural changes desired by the missionaries and agents and the ease of the transition is difficult to determine from agency reports. In 1893, the agent cited a "Hobo Creek element" for their lack of morals and an unnamed district is often mentioned as particularly problem-ridden. Alcohol use appears from missionary, agent, matron, and Indian court records, to be a problem, although it is generally conceded that other reservations had more serious alcohol-related problems.

The reports of the 1880's and 1890's frequently mention two major problems (also noted by other agents): visiting and dancing. At the height of the "closed" reservation period, an Indian needed a pass to leave the reservation and visiting other reservations was discouraged. The "problem" appeared to be chronic and the agent sourly noted in 1890: "Many of their houses are vacant and liable

to be burned the first time a prairie fire sweeps over the country, their owners being absent on a visit to some other section" (BIA 1890: 141). The tendency to visit, strong in aboriginal days, increased as inter-tribal wars were no longer a barrier and as transportation improved. The "Powwow" circuit is an outgrowth of this visiting pattern and also an expression of that other problem, dancing. The role of dancing and the agent's opposition to it is excellently summarized:

Dancing has been carried on in one district for some time. I induced them to give it up, which they did for a time; but a large band of Winnebagos came to visit and that started the dance. After them came a band from Swift Bear's camp, Rosebud. The result is they kill a number of cattle and give away many things they need at home. They neglect their work and abuse their horses; and there is more or less drunkenness, and sometimes they break up with a fight. Sometimes the whisky is taken there to make some of the women drunk, when they are abused like beasts. These dances are not civilizing, but a step backward. It is no benefit to a school boy or girl during holiday to hear the old Indians recite their bravery at the massacre at Redwood, or tell how many horses they have stolen from white men, or how many women they have stolen. I believe these dances should be put a stop to as soon as they become citizens. (BIA 1894: 192-193).

The account mentions classic elements in the feasting and visiting etiquette of the Prairie/Plains tribes. The existence of "counter-culture" currents in the mainstream movement toward assimilation is interesting, but its impact is difficult to assess.

Summary

The Santee led a typical reservation existence in the project

area. All three agency locations were in or near the research area. The lands of the Missouri River bottoms provided hay land and agricultural land that was later allotted in severalty. Houses nestled against the bluff, and a road led from the agency across the bottomlands to the steamboat and ferry landing. During the 1880's and 1890's the reservation was a largely closed and self-contained community. The reform policies that had been set in motion, e.g., allotment, citizenship, and education, all worked against this closed structure as did the legal and commercial system of the larger society. The power of the agent and the missionary began to decline in the 1890's and 1900's. This was marked dramatically by the closing of the agency in 1917 and the acceptance of the Indian Reorganization Act in 1934. At the same time the Santee land base was rapidly disappearing and they were becoming involved in the commercial economy of the larger society. The attempt to halt the alienation of land in the 1930's by the provision of funds for the purchase of new lands was insufficient to create an economic base, and the exodus of the 1940's and 1950's was dramatic, leaving a Santee population of 425 in Knox County, Nebraska, by 1976.

PAWNEE

Introduction

The Pawnee traditionally claimed the southern bank of the project area, but they did not exercise effective control over it

in historic times. During this period, Pawnee visits were probably restricted to raiding parties and occasional hunting forays because they were usually at war with the Ponca, who resided at the western end of the project area. Previous to the historic period, some ancestors of the Pawnee may have resided in the area. The St. Helena focus is generally regarded to be of Northern Caddoan affiliation, either Pawnee or Arikara, and at least some archeologists are willing to consider that the Redbird Focus is a Pawnee manifestation (Steve Holen, personal communication).

Traditional and Documentary History

Rev. Dunbar (1880: 251) summed up the origin traditions of the Pawnee by declaring that they "migrated to the Platte River region from the south and secured possession of it by conquest." The period of this migration is so remote that they failed to retain any of the details, except in a confused form. The confusion continues (Grange 1979) and save for supporting the general northward spread of Caddoan speakers from the south, the traditions add little to our knowledge of early Pawnee history, particularly with respect to their relationship with the more northerly Arikara.

The historic record begins, questionably, with the entrada of Coronado in 1541 and the idea that the "Harahey" were the Pawnee (Champe and Fenenga 1974: 10; Hyde 1951: 33; M. Wedel 1979). The record of French contact in 1673 was a secondhand reference to the "Pana" from the Marquette and Jolliet voyage (Delanglez 1946).

M. Wedel (1979: 191) notes approximately 100 pre-1800 references to the Pawnee, none by firsthand observers. Knowledge, however, of the Pawnee was improving as the distinction in the 1703 Delisle map between the Panimaha (the Skiri) and the Panis (the South Bands) is made. Finally, the individual bands of the South Band become recognized as separate entities: the Kitkahahki, or Republican Pawnee, were distinguished as a separate entity in 1777 and the Pitahauerat or Tappage are mentioned as a separate band after 1785. Population collapse was already under way and the eight to twelve villages of the Skiri were reduced to one by the end of the 18th century (Parks 1979: 23).

Lesser (1933) divides the 19th century Pawnee history into four periods. The first period extends from the Louisiana Purchase in 1803 to the Treaty of 1833. The total Pawnee population at the beginning of the period was around 10,000. Smallpox, however, hit in a series of epidemics from 1803 to 1833 (Kracht 1982). At the same time, the U. S. Government's removal policy was forcing tribes from the East into Pawnee territory. The Sioux began serious raiding expeditions against Pawnee villages in the second quarter of the 19th century which prompted a 50-year war. A pattern of band combination into larger villages, oscillating with their periodic breakdown into smaller villages, became characteristic of the 19th century Pawnee. The increasing intertribal conflict engendered by the Euro-American expansion fostered larger villages, but they would fragment because of the unreliability of the food base (O'Shea 1979;

Kracht 1982). The situation was made even more perilous by a series of devastating epidemics attacking the Pawnee on their traditional hunting grounds on the Republican River. During this time, the Pawnee often hunted with other groups, including the Omaha, for mutual protection (Hyde 1951: 246, 289, 309). Pressures of Euro-American settlement were increasing as the Pawnee reservation became virtually encircled by settlers between 1854 and 1873 (Wishart 1979a: 395). The Quaker agents increasingly insisted that the seasonal hunting cycle cease and the Pawnee take up wheat agriculture. Finally, a combination of government policy, Quaker urging, Sioux attacks, harrassment by incoming settlers, and Pawnee dissatisfaction led to the final stage of 19th century Pawnee history--their removal from Nebraska and relocation in Oklahoma (Wishart 1979a).

Economy

W. Wedel outlines the boundaries of the territory familiar to the Pawnee:

The territory claimed by the Pawnee was bound on the north by the Niobrara River, on the south by the Arkansas or possibly the Canadian, on the east by the Missouri, and on the west extended rather indefinitely toward the Rockies . . . The actual area over which the Pawnee hunted and exercised chief control was thus a strip, as follows: Commencing with the Niobrara (between its mouth and Plum Creek) and extending southward to include the Platte between Shell creek and the present day city of North Platte, thence into Kansas to include the Smoky Hill drainage between the Republican River and the Ninety-ninth meridian . . . (1936: 3-4).

The Pawnee used the land in two contrasting ways, practicing a dual economy of hunting and agriculture. Approximately two-thirds of the

year was spent on one or the other of the biannual hunts and one-third in the permanent villages in horticultural pursuits.

The tribe usually returned from the winter hunt to the permanent villages the first week in April and went to work immediately in preparation for spring planting. Planting, and the first hoeing of the crop, was usually completed by the 20th of June and the tribe then departed on the summer hunt, returning about the first of August to harvest their crops. The harvest was completed and crops were stored by the last week in October whereupon they set out upon the long winter hunt. (Champe and Fenenga 1974: 91-92).

Wishart (1979a) notes that mobility was in part required in order to find adequate pasturage for the large horse herds possessed by the Pawnee.

The traditional hunting grounds for buffalo, the major source of meat, were to the southwest on the Republican River, roughly ten days march from the permanent villages (Weltfish 1965: 171-177). In the later 19th century, however, the Pawnee did participate in cooperative hunts with the Omaha in northeastern Nebraska (Hyde 1951: 246). These hunts were generally highly organized, the pattern of movement and the location of the villages in the temporary camping areas dictated by tradition (Weltfish 1965: 163-170). Braves were also appointed as policemen to keep order on the march and during the hunts.

The cultivated crops most important to the Pawnee were corn, beans, and squash. Weltfish (1965: 119-123) noted that the Pawnee named ten different varieties of squash and pumpkin, and eight varieties of beans. The women were largely responsible for the agricultural work. The corn fields were small, seldom larger than

an acre, often located at the mouth of a ravine or similar spot where the soil was loose and fertile. Fields could be from 5 to 8 miles from the village (Irving 1955: 138).

The Pawnee traded regularly with the Omaha, Arikara, Mandan, and Hidatsa to the north, with the Spanish at Santa Fe, with various nomadic tribes, and with the French and Americans who made regular trips up the Missouri. The strongest ties were with the Wichita and other Caddoan speakers of Oklahoma and Texas (Wishart 1979: 386).

Social Organization

The Pawnee were divided into four bands: Chaui, Kitkahahki, Pitahauerat, and Skiri (or "Wolf"). The bands were originally divided into a number of villages which were largely independent and endogamous units (Weltfish 1965: 20; Dorsey and Murie 1940). With the progressive collapse of the population, small villages united into band villages and finally the bands coalesced into two and then one unit.

Three social ranks were of importance. The rank of chief was generally hereditary, and he functioned as peacemaker and guardian of the village (Dorsey and Murie 1940). The chief had a herald to call meetings and proclaim results of the chief's council. A priesthood which supervised the rich and complex religious and ritual life of the Pawnee formed, on occasion, a counterbalance to the authority of the chiefs. This was noted in the famous Morning Star ceremony in which a human sacrifice took place. In later years, this ceremony

was opposed by the chiefs. Hyde (1951) vividly records a number of the schisms among the Pawnee over the Morning Star ceremony. There were, besides the ritually-oriented priests, a class of medicine men or shamans who derived curing powers from contact with supernatural beings.

The rules for residence patterns and reckoning descent appear confused (possibly the result of the population declines and village amalgamations). Weltfish (1965) declares that kinship relations had little organizing influence among the Pawnee, but Murie presents a sharply contrasting view in discussing the complex ceremonial and societal organization of the Skiri (Murie 1914: 643). Ben Kracht (1982) has recently shown how residence rules changed as a function of depopulation during the 19th century.

Villages

The historic earthlodge villages were located in the large river valleys of the Lower Loup, Platte, and Republican Rivers (W. Wedel 1936: 4, 6). Parks (1979b) estimates that there may have been between 8 and 19 Skiri villages in the early historic period. In the 19th century, village sizes ranged from circa 40 lodges with a population of 830 to 180 lodges with 3,500 people. From 20 to 50 people occupied a single lodge (Wedel 1979). The portable skin tent or tipi was used on the winter hunt. On the summer hunt, two tipi covers were often combined to create an open-fronted shelter (Weltfish 1965: 386).

Burials

In the historic period, the dead were buried in a sitting position in excavated graves. Small low mounds were erected over them. The cemeteries, belonging to several villages, were situated on high ground some distance away (Bushnell 1927: 79-80).

Archeology

Archeologists have located many of the late 18th and early 19th century village sites of the historical record (Wedel 1936; Grange 1968; Roberts 1978). The Lower Loup Focus has been shown to be ancestral to the historic Pawnee, thus placing Pawnee occupation of central Nebraska back to at least A.D. 1500 (Wedel 1938; Grange 1968). Both Lower Loup and historic Pawnee are classified within the Post-Contact Variant of the Coalescent Tradition.

Summary

It is unlikely that the Pawnee maintained permanent villages within the project domain. Their primary use of the area would have been on hunting expeditions or raiding parties against the Ponca and the Sioux. The only remains of these transient camps would be hunting paraphernalia, much of it (kettles, knives, gun-parts) of American or European manufacture, butchered bone, tipi remains, and the like. Such finds, even if discovered, would be difficult to link with any certainty to the Pawnee, as opposed to any other tribal unit in the region.

V.

HISTORICAL OVERVIEW

Introduction

The advance of the Euro-Americans into the area came in the form of three fairly distinct frontiers. The first was the movement of fur traders into the region. While they were few in number, the changes created by the traders in the Indian way of life were tremendous, and the successful advance of the later military and agricultural frontiers were in part dependent on these changes. These advancing frontiers were shaped and modified by advances in the major means of transportation: the development of river transportation and the use of the steamboat, the development of the inland road system with its military roads and stage and freight lines, and finally the great mover of the area, the railroad.

The Fur Trade Frontier

The development of the fur trade in the Missouri River Basin led first to many temporary expeditions through and near the Lewis and Clark Lake area and later to the establishment of more or less permanent posts in the region. Historical documentation of these gives valuable information on the region as a whole; much of this is summarized in the tribal overviews. The reader is also directed to the additional information in Ludwickson et al. (1981) which focusses on the area immediately downstream from Lewis and Clark Lake.

The earliest document which deals directly with this section of the river is Bourgmond's 1717 description (Giraud 1958: 16-17). This description appears to be based on direct observation of the Lower Missouri, but on secondhand information for the Upper Missouri. It includes no direct comments on the project domain.

In 1739, the Mallet brothers ascended this portion of the Missouri River in a misguided attempt to reach Santa Fe (Folmer 1939). They reached what they called the "Panimaha River" which could be the Niobrara River, Ponca Creek, or the White River. Their "Panimaha" village is usually taken to be Arikara (in which case it was probably on the White River), or Skidi Pawnee (in which case it was probably on the Niobrara), although it may have been Omaha and/or Ponca because of a confusion with "Maha" (in which case it could have been on any of the three streams). In any case, the account of the Mallet expedition includes no information on the project domain.

The next information is in a letter written by Miro', then governor of Spanish Louisiana, in 1785. He mentioned that the Poncas have a village on the small river below the "River-that-Runs." This probably refers to Bazile Creek, the first stream of note below the Niobrara, which is the "River-that-Runs."

After 1790, travel through the area became common, but the documentation of it offers little information on the project domain. Jacques D'Eglise travelled through in 1792 and 1793, and again in 1794 when he was robbed by the Ponca (Nasatir 1927: 54-55). Also in 1794, Truteau camped on Bon Homme Island (McDermott 1970;

Nasatir 1952 I: 259-311). In 1795, James MacKay visited the Omaha below the project domain and sent John Evans on two trips upriver in 1795 and 1796.

The last document antecedent to the Lewis and Clark expedition is Perrin du Lac's account of the region in 1802. He ascended the Missouri as far as the mouth of the White River. Much of his description of the region appears to derive from a companion, probably Truteau (Nasatir 1952 I: 111). No direct evidence regarding the project domain is included.

In 1804, the Lewis and Clark expedition passed through the Lewis and Clark Lake area. On August 30 and 31, they met in council with the Yankton on Calumet Bluff, now the southern end of Gavin's Point Dam. On September 1, they camped on Bon Homme Island and then proceeded slowly upstream, passing the mouth of the Niobrara River on September 4. Their observations are restricted to natural phenomena, although they mistook some natural features on the Nebraska side for ancient fortifications. Their comments on the flora and fauna are included in the environmental chapter of this report. On their return trip in 1806, they passed the mouth of the Niobrara on September 1. While passing through the area, they encountered some Yanktons who came from a camp on Plum Creek, on the north side of the river. This may have been outside the project area, since the members of the expedition did not see it, although they were alert to possible hostile Sioux (Thwaites 1905, V.:367).

After Lewis and Clark, travellers through the region frequently wrote descriptions of the general area, and a few make brief mention of the project area. In 1809, James (1966) and Thomas (1964) visited Yankton village which could have been in the project domain, but more probably was located downstream from it (cf. Ludwickson et al. 1981: 92-95). Brackenridge in 1811, the Long expedition in 1820, the Atkinson expedition in 1823, all make mention of a Ponca village on Bazile Creek, and Maximillian mentions the site of this village in 1833. Nicollet in 1839 also recorded a Ponca village near Bazile Creek, but this could represent either a re-occupation of the locality or the site of the former village (cf. the section on Ponca ethnohistory for a more complete discussion).

In 1851, Rudolph Friedrich Kurz (1970: 70-71) mentions that his party put the former bourgeois of Fort Vermillion--a Prussian named Schlegel (spelled Slagel by Culbertson (1952: 40)--ashore on Bon Homme Island to start a new trading post.

The fur trade posts that appeared in and near the project area are reviewed briefly here. Many temporary posts must have existed; there is, for example, the passing mention by Kurz (1937: 70) in 1850 of a trader let off at Bon Homme Island to trade with the Sioux. S. Loeber established a trading post at the townsite of Frankfort, Nebraska, for the purpose of trading with Smutty Bear's village in 1856; it quickly became the site of a small river town (Draper 1876). The most continuously occupied place of trade was

the mouth of the Niobrara, which featured posts of varying permanency located on both sides of the river. Fort Mitchell, located on the north side of the Niobrara, was established in 1833, but abandoned a few years later because of high water. It was still standing in 1843 and is shown on a number of later maps (Chittenden 1935: 927; Harris 1951: 68; Audubon 1897: 504; Larpenteur 1898: 288, 300; U.S. Missouri River Commission 1878-82, 1895). Sarpy's Post on the Niobrara was abandoned in the winter of 1852-53 (Larpenteur 1898: 301). The Ponca remember a number of other posts, one run by the brother of Indian Agent J. Shaw Gregory (Howe 1912: 184).

By the time of the reservation period, trade centered around the annuities rather than fur. Annuities were the installment payments, in money and in kind, for treaty-purchased lands. As the number of treaties with the Indians increased, the flow of goods in the form of annuities and in the form of goods purchased by Indians with annuity money also increased, perpetuating the functioning of the surviving posts.

Military Frontier

The forces which led to the treaty negotiations were varied, but the presence of the military--initially to protect settlers, immigrants headed to the west coast, and miners--posed a threat of force if a peaceful resolution by treaty could not be determined. After treaty time, the troops remained to enforce order.

The troops which headed into the Dakotas to ensure peace or

punish hostile Indians frequently passed through the research area. The first such expedition was that by Colonel Leavenworth against the Arikara in 1823. He went up the river with 220 men and three keel boats (Chittenden 1935: 584-585). The real military presence in the Upper Missouri began with General Harney's "Sioux Expedition" in 1855, after which military operations in the Dakotas expanded rapidly (Holt 1925: 74-80). The trading posts, Fort Pierre and Fort Lookout, were occupied by the military from 1855 to 1857. Finally, Fort Randall was established in 1856 followed by a string of forts along the upper Missouri River (Prucha 1964: 20, Plate 17). This military expansion is one of the major reasons for the dramatic improvement in transportation facilities through the area.

The expedition of General Harney in 1855-56 employed two steamboats to transport the troops north (Holt 1925: 74-80). The later expeditions of Sully in 1863-65, starting in Sioux City and heading north, were more impressive. "Sully's army came to 4,000 cavalry, 800 mounted infantry, . . . 300 wagon teams, a herd of 300 beef steers, and 15 Missouri River steamboats to carry his supplies north." This particular expedition was joined by an emigrant train of 123 wagons (Sully 1974: 180-181).

A number of soldiers and civilians have left their impressions of the military advance up the Missouri. Myers (1883) and Drips (1894) left accounts of the 1863 march up the Missouri. Myers described passing through the project area:

On the 10th we marched 22 miles and camped at Bon Homme, which was not much of a town and consisted of some eight or ten log houses, located on a high, rolling prairie. . . we marched 25 miles and camped on Choteau creek, having passed over a rough country with very poor feed for our horses (Mayers 1888: 11).

Company B of the 7th Iowa Cavalry was also briefly stationed in Niobrara. The Ponca agent (BIA AR 1864) accused them of the murders of several friendly Ponca (Ludwickson 1982). After the 7th Iowa departed, detachments of Company "B", First Battalion, Nebraska Veteran Volunteer Cavalry, were stationed in Niobrara; their conduct was such that the town was temporarily abandoned (Ludwickson 1982).

The most famous military expedition to go up the Missouri, and the one that still lives in local oral tradition is Custer's 7th Cavalry. Local tradition declares that several graves in the area belong to Custer's men who died while encamped in the vicinity. The truth of this story could not be determined. The Springfield Times recorded the cavalry's passing:

The 7th Cavalry are encamped on Snatch creek, three miles below town (May 8, 1873). . . The Miner passed up Sunday morning loaded with supplies for the 7th Cavalry. She moves with the troops. The 7th Cavalry passed through this place about noon last Sunday on their march for Fort Rice. They went into Camp just across Emmanuel Creek . . . " (May 15, 1873).

The expansion of the military posts peaked in the west around 1878, and as the settlers swarmed into the area in the 1880's, the Upper Missouri River posts slowly passed out of existence (Prucha 1964: 32-34).

Steamboat History

Steamboating on the upper Missouri began in 1831 with the ascent of the Yellowstone to Fort Tecumseh, later to Ft. Pierre (Chittenden 1935: 338). There was a slow increase in the number of steamboats during the period of the fur trade, then government and mining activity led to a florescence of steamboat traffic beginning in the 1860's. Briggs suggests that the discovery of gold in Montana in 1862 was the real start. The goods for the upper river were largely for trading houses, military posts, Indian agencies, and mining camps (Briggs 1929: 360).

The steamboat required a host of auxiliary services. The most important was wood to fire the boilers. On the 1855 Harney expedition, the soldiers cut up the driftwood on the sandbars and along the shore (Miller 1892). Later, woodyards were established where steamers could buy cut-wood from "woodhawkers." The life of the woodhawker was solitary and often dangerous in hostile country. Even the Indians, however, occasionally cut and sold wood to the steamers (Le Roy 1912: 57). A number of woodyards were recorded on early maps (U. S. Missouri River Commission 1878-82). The Lober, Hughes, and Kountz woodyards are all on the stretch of the river encompassed by the project area (see also Atkins 1908). Landing sites and facilities also sprang up along the river. Yankton became the major port of call for the area, and landings were made on a regular basis at Springfield, Running Water, Niobrara, and Santee agency. Ferry service also connected Springfield with the Nebraska shore early on (Springfield Times, April 4, 1872).

While steamboating was an important and for a long time a lucrative endeavor, it was also highly seasonal, expensive, and dangerous. McDonald (1927) records 441 steamboat sinkings with a property loss of over eight million dollars. Snags in the river were responsible for 240 of the accidents; ice damage was the next greatest danger, causing 79 lost vessels. Sinkings were so common that special salvage operations went into business, and special equipment was designed to raise the sunken steamers. Ten steamboats sank in the project area:

Antelope: Destroyed by fire five miles below Upper Bonhomme Island, above Yankton, S.D., on April 12, 1869. Two passengers were lost . . .

F.Y. Batchelor: While in winter quarters at Running Water, S. D. was caught in ice floe on March 7, 1907 and totally destroyed.

Helena: Sunk by snag at BonHomme Island on Oct. 16, 1868. . . Was raised and repaired.

Imperial: Sunk by ice at BonHomme Island, about 20 Miles above Yankton, S.D. in 1867.

Josephine: While in winter quarters at Running Water, S.D. was caught in ice floe on March 8, 1907 and sunk. Steamer a total loss, except boilers and machinery, which were salvaged and shipped to the Yukon River.

M. Livingston: Sunk by ice at Running Water, S.D. in Spring of 1868. Was raised and repaired . . .

Miner: Sunk by snag at the mouth of Running Water Creek in 1866, and became a total loss.

South Dakota: Destroyed by fire between Running Water and Yankton, S.D., on May 10, 1902.

Susie B.: Sunk by ice floe at Running Water, S.D., on March 8, 1907 and became a total loss.

Tempest: Sunk by snag at upper Bonhomme Island, about 28 miles above Yankton, S.D., in 1865. (McDonald 1927).

A number of steamers were built at Running Water, among them the South Dakota in 1899, the Susie B. in 1903, and the Weston in 1901.

Railroads

"The great rival of the Missouri River steamboat was the railroad, and the struggle between the two lasted from 1859, when the Hannibal and St. Joseph Railway reached St. Joseph, Missouri, until 1887, when the Great Northern Railway reached Helena, Montana" (Briggs 1929: 371). Actually, the relationship was not only competitive, but for a while symbiotic. As the railroad reached a river town, that town became the next focus of steamboat activity between the railroad and the settlements further upstream. The steamers ended by plying the river between the different railheads. The railroad reached Sioux City in 1868 and Yankton in 1873 (Briggs 1929: 371, 484). Finally, the Milwaukee Railway Company in 1879 sent a branch line from Marion Junction to Running Water. The railroad quite literally created the town of Running Water at Brook's ranch, the ferry crossing to Niobrara (Springfield Times, Nov. 6, 1879). Steamboat traffic quickly developed between Running Water and Fort Pierre, and Running Water became the shipping point for government supplies bound upriver (Hammer 1978: 48). In the January 29, 1880 Springfield Times ran the following description of Running Water under the heading "Terminus Town":

The railroad depot is about completed. The railroad company are now building a temporary engine house 30 x 60, . . . They are also building cattle pens, and making other necessary improvements. Among the many improvements made here since the town was first started are two whiskey shops, two stores, a livery stable, a hotel, a lumber yard, blacksmith shop and two dwelling houses. A good many people have come here with the intention of locating, but the high prices of lots have driven them away.

Steamboat trade started in Running Water in April 7, 1880, when the Steamer Niobrara stopped at the landing and took on freight for the Black Hills (Springfield Times April 8, 1880). In order not to be left out, Springfield constructed a road from the town to the railroad (Springfield Times Nov. 20, 1879). Interestingly, the first cargo sent over the new railway consisted of deer and elk hides taken on the Niobrara River (Springfield Times Dec. 25, 1879), a brief merging of an old way of life and a new one. The true importance of the railroads, however, was in the movement of the farm produce, particularly wheat and cattle to the markets of the east. The railroad also became a central factor in the promotion of settlement and in the determination of settlement patterns of the Dakotas. During the great Dakota boom of 1878-1887, the railroad companies platted 138 of the 285 towns laid out in South Dakota (Hamburg 1975: 173).

While the railroad reached the project area on the Dakota side in 1879, it was very late in coming to the Nebraska side. Niobrara finally received rail service in 1902 when the Fremont, Elkhorn, and Missouri Valley branch of the Chicago and Northwestern railroad built 69 miles of road from Verdigre, Nebraska, to Bonesteel, in

anticipation of the 1904 opening of the Rosebud reservation for settlement (Casey and Douglas 1948: 235). The relative lack of transportation services on the Nebraska side correlates with the lower settlement, and later development in comparison to the Dakota side.

Inland Roads

While less spectacular than the advance of the steamboat and the railroad, the development of overland routes and the increase in freight and stage lines were important for the settlement of the country. The development of roads was so important that they were surveyed and improved by the Federal government at an early date. Federal funds were used in improving roads on both sides of the Missouri. The 34th Congress authorized \$30,000 to be spent on a road connecting the mouth of the Platte, Omaha, Dakota City, and the Niobrara River. The road was surveyed in 1857, and the western end ran "across various branches of Bow Creek, to the east branch of Bazille Creek, the engineers followed the latter stream to its junction with the Missouri and thence five miles along the bottoms to the mouth of the Niobrara" (Jackson 1964: 235). Grading and bridge construction were completed in 1858, and settlers began following the road into the Niobrara River valley.

Government interest in road construction on the Dakota side came later and involved more politics, scandal, and money than its Nebraska counterpart. Road survey, bridge construction, and grading

took place from 1865 to 1869 between Sioux City and Fort Randall at the cost of \$52,000, most of which was expended between Sioux City and Yankton.

Beyond Yankton to Bon Homme the federal road would . . . follow a prairie road away from the river. Between Bon Homme and the Yankton Agency, two alternate routes could be followed: Brown's route via his trading post, or the older Cooper route along the river. The stage lines were moving to the new route and the inspector preferred it (Jackson 1964: 307).

Traces of this road are preserved in the prairie a short distance east of the site of old Bon Homme.

As can be observed, the government roads often followed already established routes, and in southeast Dakota these developed early. Mail service by steamer, horseback, or on foot, began soon after the establishment of Fort Randall. By 1861, the service made twice weekly stops at Yankton, Bon Homme, Yankton Indian Agency, and Fort Randall until the Indian Outbreak interrupted mail and stage service from 1862 until 1866.

In the late 1870's the Wyoming Stage Company was offering daily stage service between Yankton and Fort Randall with stops at Bon Homme and Springfield (Briggs 1929: 401-424). By the 1880's the competing and complementing transportation networks of the area offered overland stage and freight services, steamboat facilities, a railroad terminus, and several ferry services that crossed the river. These transportation nets shaped and were shaped by the advancing agricultural frontier.

Agricultural Frontier

The settlement of the area came in three separate waves. In the first, prior to the Sioux Outbreak of 1862, few people entered the project area, but the period was marked by the final withdrawal of Indian hegemony over the land and the creation, in name at least, of most of the communities along the Missouri. Briggs (1929: 3) refers to the period as the "town plat" boom.

Settlement began at Niobrara in the spring of 1856. Omaha Indian title to the land had been extinguished, but Ponca claims had not, and the Ponca burned the settlement in the winter of 1856-57. The Treaty of 1858 moved the Ponca north of the Niobrara, allowing relatively unmolested occupancy of the town. In the meantime, the Nebraska legislature had incorporated the L'Eau qui Court Company and had platted the townsite of Niobrara. This company went broke and the actual patents to the land were issued in 1860 to the Niobrara Town Company (Draper 1876). Raynolds describes the town in 1860 as consisting of a "three-story hotel and about a dozen houses, but its inhabitants now comprise but nine families, the others having gone on to the mines" (Raynolds 1868: 125).

The town of Breckenridge, where Santee Agency now stands, was located in 1857. The first mill was built there, but it proved a failure and the inhabitants generally moved to Niobrara. The town of Frankfort was settled in 1856 by S. Loeber who erected a post to trade with the Yankton village across the river. Roughly fifteen or twenty men were located here. Tepiota, mentioned by

"Perry Winkle" in 1858, and recorded in the public land survey maps is again mentioned by Hosmer in 1864; he states that neither Frankfort or Tepiota had more than three houses apiece (Hosmer 1936: 218).

Settlement on the Dakota side of the river was not permitted until the ratification of the treaty with the Yankton which occurred in 1859. The Trading Companies, however, took advantage of their licenses to enter Indian territory and establish posts at likely townsites. Frost, Todd and Company erected posts as far up the river as Yankton, Smutty Bear's Camp (Gavin's Point), and possibly Bon Homme (Briggs 1929: 17). In 1858, a group of settlers from Minnesota located at the townsite of Bon Homme and put up log cabins. After a winter spent on the Nebraska side, the settlers returned in larger numbers with title now cleared. Some of the settlers moved upriver and founded Wanari. Both towns were incorporated in 1862, and the name of Wanari was changed to Springfield (Briggs 1929: 23).

With the Sioux Outbreak in 1862, settlement stagnated and many settlers left the territory. "Bon Homme, the most western of the permanent settlements with a population of 200 in August, 1862, was deserted until early 1868" (Briggs 1929: 63).

A second wave of settlement occurred between 1866 and 1874. Improved weather conditions, solution of Indian difficulties, the end of the Civil War, passage of the Homestead Act in 1862, and the discovery of gold in the Black Hills in 1873 combined to increase interest in the Dakota territory. Immigrants organized companies

and moved en masse into the region. Indeed, this became the most common method of immigration (Briggs 1929: 112). The best example of this approach to the organized movement of large colonies are the Hutterites who began to arrive in Bon Homme County in 1874 (see Hutterite section).

A series of droughts and grasshopper swarms beginning in 1874 stemmed the tide of migration for several years. The migration began again in what is described as the Great Dakota Boom, 1879-1886. A series of wet years were responsible for the boom, and the promotion of immigration by the railroads led to a flood of immigrants of astounding proportion until drought and crop failures brought this period of migration to a close (Hamburg 1975).

During this final boom, the river towns experienced a number of changes. The flood of 1881 was devastating to the river boat traffic. The flood caused extensive damage to the small settlement of Frankfort and the town was abandoned (Anonymous 1882: 1034). Niobrara was inundated and the town moved to a new location $1\frac{1}{2}$ miles from the old one (Mattison 1956: 80). Bon Homme began to decline in the late 1870's and early 1880's. The lack of a railroad terminus and a shift in the channel cutting off access to the river were major factors. With the shift of the county seat to Tyndall in 1885, the town was largely abandoned (Mattison 1956: 67).

Census data for the project area provides a convenient introduction to its economic base. In Bon Homme County, population increased early and rapidly, peaking around 1920, followed by a decline through the rest of the century. The Nebraska side, Knox

County, follows essentially the same pattern although the county filled up later and slightly less rapidly, peaking around 1930 before beginning to lose population. The later settlement and lower population density of the Nebraska side undoubtedly reflect lower land quality and poorer transportation facilities. These, in turn, are reflected in slight differences in economic orientation.

The decline in population is due to at least two forces: the steadily increasing size of the average farm unit, and the fact that, "More people were needed to improve the land and to build the houses and barns than it took to keep the farms going" (Sauers 1963: 36).

With improving transportation and declining population, the number of towns needed to supply rural needs decreased. A number of small towns slowly disappeared; Bon Homme, Frankfort, and Running Water no longer exist. The 1980 population of Niobrara, 419, is slightly less than its 1880 population, 475. Only Springfield has experienced slow and erratic growth.

The settlement pattern of this region was generally starkly different from the European rural villages from which most of the settlers came. The family lived in an isolated dwelling. "Our farmers lived in the 'country' and went to 'town' on business or pleasure . . . The village pattern was retained almost only where religious bonds or social planning prescribed living in close congregation" (Sauer 1963: 36). The project area is an exemplar of Sauer's generalization, down even to its exception, the Bon Homme Hutterite colony.

The area inherited the basic European agricultural pattern of mixed crops and livestock, within which adjustments to both the changing frontier position and localized climatic conditions were made. Frontier agriculture has always been market oriented, and as transportation and the advancing settlements tied the area more closely to eastern markets, agricultural production diversified and the nostalgic self-sufficiency of the pioneer decreased.

The two cash crops of the Dakotas were wheat and cattle. Both were dependent on the railroad and, it was soon discovered, severely affected by the weather. Wheat had been the cash crop of the frontier in the Middle West, and it reached its zenith on the prairies of the Dakotas where farms of thousands of acres were devoted to the crop (Briggs 1929: 234-239). As the years progressed, the advantages of corn and oats came to the fore. These two grains have each greatly exceeded wheat acreages in Bon Homme County since the 1920's. A similar pattern is noted for Knox County although wheat never had the dominant position there that it held across the river.

Cattle raising in the area has two historical aspects. One, short-lived and romantic, was the long distance cattle drive to the Dakotas. The second is the role of locally raised cattle in the mixed farming economy of the region. In the 1860's and 1870's, Texas cattle were moved north in large herds.

. . . It soon became evident that southern cattle finished on the northern ranges, free from Texas tick, the debilitating climate, and scarcity of grass, grew two hundred pounds heavier than at home.

This encouraged Texas cattlemen, and before many months had passed they were sending their cattle "up Trail" in search of markets and new feeding grounds (Briggs 1929: 386).

Niobrara was one of the points of crossing, particularly for cattle headed north to supply the military posts and Indian agencies (Springfield Times August 6, 1874). The October 15, 1874 Springfield Times noted one of the many incidents connected with the drives: "A few Ponca Indians made a raid on a herd of Texas cattle near Niobrara, and ran off 35 head. All the cattle were recaptured." With increasing population and better transportation, open range cattle herding was doomed and this style of life was hastened into history by the deadly winter of 1887-88.

The more prosaic commitment to livestock, in particular cattle, in the mixed farming tradition was a more important long-term historical variable for the region. The floodplains of the Missouri long were important haying grounds, and Bon Homme Island is remembered for the cattle that grazed on it. Knox County has always been more firmly committed to the raising of cattle than Bon Homme, having more cattle per acre of farmland. This is a result of having less of the farmland suitable for the production of grain crops. The number of head of cattle has doubled since the Second World War on both sides of the river. Among the numerous factors which have led to the increase in average farm size, the economics of increased cattle production is probably among them.

The only major industrial plant near the project area was the Western Portland Cement Company owned by an Englishman living in

Milwaukee. The chalkstone beds west of Yankton were of sufficient quality and the railroad connections in Yankton were good enough that 500 acres of chalkstone land were acquired. The plant went into production in 1891 when a spur line was built out to the plant from Yankton. Hard times came and the plant closed in 1910. The huge smokestacks still stand (Karolevitz 1972: 124-125, 146).

The biggest change in the region since settlement in the 1870's and 1880's undoubtedly came with the building of the Gavin's Point Dam. The Missouri River Project which included the construction of six dams on the Missouri was approved by Congress in 1944. Construction began in 1952, the closing of the Missouri River occurred in 1955, and the dam was completed and dedicated in 1957. Recreational facilities increased, irrigation projects began, river levels were controlled, the ecology of the river altered, and the lives of the people changed (Karolevitz 1972: 201-204). Niobrara was moved yet again. All the changes and adjustments necessitated by the dam have yet to be measured.

THE BON HOMME HUTTERITE COLONY

Introduction

The Bon Homme Hutterite Colony was established in August, 1874, along the banks of the Missouri River in Bon Homme County, Dakota Territory. This group was the first Hutterian group to come to America, reaching New York from Russia on July 5, 1874. From New York they proceeded to Lincoln, Nebraska, where an epidemic of dysentery struck Lincoln and 36 of the Hutterite children died. To

escape the epidemic, they decided to move to temporary quarters at Yankton, the territorial capital of the Dakota Territory (Peters 1965: 41).

The Hutterites did not take up homestead land because they did not wish to be under obligation to the government, and because it was granted in such a way that it did not allow for concentrated bloc settlement. Instead, they bought 2,500 acres of land from a private owner, Walter A. Burleigh, a former Indian Agent, for \$17,000 in cash, with the remaining balance to be paid later (Peters 1965: 42). Since the Burleigh land was in Bon Homme County, the new colony simply took this name. Two of the original buildings are still used as residences by the Hutterites. The one of chalkstone is thought to be the old agency building and store, and the other of wood was Burleigh's residence. The colony is listed on the National Register of Historic Places.

Historical Background

The Hutterites had their origins in the Anabaptist movement in Switzerland in the early sixteenth century. Because of their origin in the Anabaptist movement, Hutterites and Mennonites share some common beliefs and practices and have remained in close touch. There is agreement in essential Anabaptist doctrines such as adult baptism, non-resistance, and rejection of the oath. The greatest difference is the Hutterite practice of religious communism which includes working together for a common fund, living under a common roof, and eating at a common table. The Hutterites, however, do not

wish to be considered a branch of the Mennonite denomination.

The Hutterites take their name from Jacob Hutter an early (1530) leader who advocated the community of goods, a practice which had begun a few years earlier when they

. . . laid down their cloaks, and every man threw down on it entirely of his own accord without compulsion, his earthly possessions according to the teachings of the prophets and apostles for the benefit of the needy (Smith 1950: 56).

Hutter organized these Anabaptists into households or Bruderhofs with goods in common and excommunicated those who did not follow his teachings (Smith 1950: 61). Local noblemen, who knew the Hutterites to be good farmers, welcomed them to their estates in spite of kingly and imperial edicts prohibiting the harboring of such heretics.

During the next two centuries the Hutterite's fortunes waxed and waned. As pressures to rid the land of Anabaptists grew, the Hutterites were forced to flee. Most fled east to Hungary but were barely tolerated and spent years wandering in the mountains. Their "Golden Age," as recorded in their chronicles, followed the treaty of Augsburg in 1555, but this lasted only a few decades. The sect was nearly wiped out as it was buffeted first by marauding armies of both Catholics and Protestants that swept over much of Europe during the first half of the 17th century, and then by the Turks during the second half. During the first half of the 18th century, bigoted Jesuits were determined that all dissenting sects, such as the Hutterites, must be exterminated from the Catholic possessions of the Hapsburgs (Smith 1950: 368). One small remnant survived by fleeing to South Russia. Here they enjoyed the same

religious toleration and political and economic freedom granted Mennonites and other German settlers invited by Catherine the Great to settle lands recently acquired from Turkey. With increased prosperity, the group splintered into two factions--those wishing to maintain the communal way of life and those wishing to establish independent homesteads. In Russia their settlements were close to those of the Mennonites, and when the special privileges were withdrawn by the Russian government in the 1870's, the Hutterites decided to follow the Mennonites to America (Smith 1950: 380-383).

Michael Waldner, a blacksmith, was the leader of the first contingent of Hutterites to come to America and establish the colony at Bon Homme. These people became known as the Schmieden Leut (blacksmith people). Later that summer, another group led by Darius Walter arrived and established a colony at Wolfreek, a small tributary of the James River. These became known as the Darius Leut (Darius people). In 1877, a final group of Hutterian Brethren came to Dakota and established the Elm Spring Colony along the James River in Hutchinson County. These people became known as the Lehrerleut because their leader, Jacob Wipf, was known as Jacob Lehrer, that is, "teacher Jacob." These three original colonies became "mother" colonies to numerous "daughter" colonies as population pressures eventually impelled expansion. Approximately one-half of the Hutterites who migrated from Russia in the 1870's settled on individual homesteads and established their own church congregations, many eventually affiliating with a Mennonite conference. Those living communally in the colonies refer to these independent farmers as prairieleut (Prairie people) (Unruh 1972: 113-114).

Economic and Social Organization

Each individual Bruderhof or colony is incorporated under the laws of the state or province in which it is located. In 1905 the colonies formed religious corporations under the laws of South Dakota (Conkin 1964: 54). Until that time, the Hutterites purchased and owned property as a religious association (comparable to the manner in which a religious denomination or church owns property today). The articles of incorporation vest all property rights in the corporation, thereby denying individuals any right to private possessions or any privilege of withdrawing any of the corporation's assets upon leaving the community. In addition, it requires that all labor, services, and earnings of the members be given to the corporation. The stated purpose of incorporation is for "promoting, engaging in and carrying on the Christian religion," it effectively protects the communal system of the Hutterites from any legal attack by a dissatisfied member. Because of their corporate status, they do not enjoy the tax benefits granted religious institutions (Conkin 1964: 54).

A colony is a complete, independent economic and social unit usually consisting of from fifteen to thirty families. The minister is the acknowledged leader of the colony for he is responsible for the spiritual needs of the group. At Bon Homme, in addition to church and spiritual duties, the first minister is also in charge of the orchard and the bees. The second minister teaches the German school and is in charge of planting the garden. The women do the

weeding, harvesting, and processing of garden produce. The secretary-treasurer of the corporation is also the steward or "boss" who handles all of the money of the community. He is the one who oversees all of the community work, and responsible to him are the managers of the various enterprises within the organization.

These managerial positions are filled by election of the majority of members of the corporation. Women are not voting members of the corporation; however, womens' values and usefulness are readily acknowledged (at least to this female interviewer!!). Males achieve church membership and corporation membership simultaneously upon baptism. Membership and marriage frequently occur at approximately the same time, but one is not necessary to the other and a number of examples of unmarried males who are members of the corporation were cited. A male usually marries in his early twenties; for females the marriage age is comparable to slightly younger.

Bon Homme Colony is essentially agricultural but with a diversified operation. Approximately one-half of the colony's land is hilly pasture land on which cattle and sheep are grazed. Of the land under cultivation, 500 acres are irrigated with water from the Lewis and Clark Lake; (drinking water comes from wells; water for baths and utilitarian functions is bought from the rural water system). The colony has a large commercial hog operation, a dairy, 8,000 laying hens, and a sizeable flock of ducks. These enterprises are mechanized and there is no prohibition against the use of modern equipment. This wide diversity of agricultural enterprises assures

that there will be work for everyone throughout the year. At present, the crafts of shoe making and broom making are not practiced, though the shops for these activities still exist. These crafts are considered more as avocations and are pursued only when someone is interested or when more jobs are needed.

It is the need for more work or conversely, an overabundance of labor, that motivates expansion to daughter colonies. The population at Bon Homme is now ninety persons, including women and children, a total of fifteen families. The average colony supports a population that is made up of at least fifty percent children, which means a very low ratio of able workers to the total population (Conkin 1964: 81). The colony was just completing a new machine shed and maintenance shop for their farm equipment, and the construction of this building in addition to the routine farm duties provided more than enough work for everyone. When colony size reaches 20-22 families, a split becomes necessary because of the strain on resources. Through experience it has been found that groups become unwieldy when they become larger than 150, or at most 200 persons (Waldner 1946: 51). For Bon Homme, the optimum population is somewhat less. When the time for division occurs, the families who are to migrate are chosen by lot. According to my informants, there are now forty-six colonies in South Dakota, all descendant colonies of Bon Homme, that is, daughter and grand-daughter colonies of the original Bon Homme group. The most recent split at Bon Homme was in 1972.

The Impact of Gavin's Point Dam

The building of Gavin's Point Dam and the subsequent formation of Lewis and Clark Lake has had a profound impact on the Bon Homme Hutterite Colony. In the 1940's the Colony owned 10,000 acres of land on both the South Dakota and Nebraska sides of the Missouri River. Of this approximately 2,500 acres was river bottomland. In the early 1950's, they sold their land holdings on the Nebraska side to a private owner, leaving the Colony with about 5,500 acres. In the process of building the Gavin's Point Dam, the United States government acquired through condemnation, approximately 2,500 acres, mostly bottomland, but also some upland.

The government offered the Hutterites \$35.00 an acre. The Hutterites felt this was an inadequate and unfair price for land which they considered some of their best and most productive. About 1,000 acres of the bottomland was under cultivation and the remainder was hay, pasture, and timber. In addition, they had an orchard, hog lots, cattle feedlots, and winter grazing pasture ("best place there was for winter feeding of cattle"), and a sawmill which produced lumber for both domestic use and for sale ("milled mostly cottonwood, but if that is dried and kept dry it will last almost forever"). In 1956-1957, the Hutterites went to court because they felt the government had not appraised their land fairly at \$35.00 per acre. They express some misgivings as to the wisdom and rightness of this decision, but at the time they felt they had no recourse other than through legal action to obtain a just remuneration for their land.

The court ruled in their favor and they were awarded \$70.00 per acre--a sum they felt was inadequate, but which they accepted. They state emphatically that they are now treated well and fairly by the Army Corps of Engineers personnel and that relations are amicable.

Perhaps the major structure, and the one that in the minds of the older members of the group was the identifying marker of the Colony, was the mill where grain was stone ground into flour for use at the colonies and for custom and commercial uses as well. It was located on bottomland just below the main farmyard. It had been built in 1875 within a year of their arrival in Dakota with a loan of \$6,000 from the Harmony Society (the Rappites) of Pennsylvania and with the help of men from the Amana Society in Iowa (Conkin 1964: 50; Deets 1939: 49). The mill was powered by gasoline engine, not by water. Unfortunately for the Hutterites, the mill burned before the government settlement of their land dispute and they received no remuneration for it. The stonework of the mill, which remained after the fire, was flooded by water of the Lewis and Clark Lake, and no mill was ever built on higher ground.

Another immediate as well as long-term effect of the dam was the size of the colony. With their arable land cut nearly in half, it became mandatory that the group divide. Twelve families had to move to another location. In the last twenty-five years, 700 acres have been replaced through purchase, but the colony has never been able to get back to its pre-dam size and is now one of the smallest of the Hutterite colonies. About one-half of their present

land holdings are hilly land suitable only for grazing, so that in reality they have been unable to replace the tillable land lost to the formation of the lake. One of the critical factors in determining optimum population size for a colony is the man/land ratio, and in spite of diversification to more intensive enterprises, they have not compensated for the loss of such a large portion of their agricultural land, and the population of the colony has been permanently reduced.

Erosion along the shoreline of the lake is another problem that concerns the Hutterites. The once relatively gentle slopes from top land to bottomland have been eroded by wind and water to precipitous bluffs. This is graphically illustrated by a section of fence and a gate that hang in mid-air over a bluff. The colony buildings are located close to the edge of the lake; therefore, along the shoreline directly behind the houses and farm buildings, the banks were riprapped to avoid erosion. At the east end of this section of riprap, the Hutterites have placed some discarded machinery in an attempt to stay the erosion (site 39B048), but this has had minimal effect because of the raising and lowering of the water level and consequent water and wind currents. Ideally, the Hutterites would like to have had the riprap extended the length of their property.

Another effect of the building of the dam and formation of the lake is the ownership by the government of a strip of land along the entire length of the lake, that is, a strip of land which

is public property and to which the public has the right of access. This arrangement is contradictory to the Hutterite way of life. Unlike many religious groups, the Hutterites do not accost strangers on street corners, or go from house to house ringing doorbells to win converts, or to impose their notions on others. On the contrary, they avoid confrontations with others and seek to separate themselves from the rest of the world, its fashions, its activities, and its pleasures. Given the recreational potential of the lake, the Hutterites are alarmed at the influx of fishermen, boaters, hikers, and snowmobilers. According to my informants, they fear this will be a "bad influence on our young men." Further questioning revealed that no young men had left the colony because of this negative influence, but the intrusion of strangers is always disquieting. Because of the location of the colony buildings, the government land is only a few feet from the houses, kitchen-dining room, and kindergarten building; strangers can legitimately walk right past their door.

Interaction with the Larger Society

To the Hutterites, their way of life is their religion; they see it as commanded and sanctioned by God--the one exclusively right way. The detailed pattern is preformed and God-sanctioned, therefore, the individual's only part is to will to obey it. Acceptance of this, releases the individual ". . . from the Sturm and Drang faced by those who would cut their own pattern" (Waldner 1946: 47).

Because they see their way of life as the only right way, they do not make a distinction between the secular and the sacred. They look to their religion when making both small decisions (e.g., how to dress) and large decisions such as electing their minister or emigrating.

This adherence to a nonconforming lifestyle has created resentment by others throughout Hutterite history. It is difficult for most societies to tolerate in their midst any group that wants to remain separate and distinct, and no country has tolerated the Hutterites for long or been able to bring about a thorough cultural assimilation of them. It is resentment of this characteristic which has been behind much of the persecution they have suffered in the four and one-half centuries of their existence (Flint 1975: 67).

During both the First and Second World Wars, there was much negative feeling in South Dakota toward the Hutterites because of their refusal to bear arms and to wear the uniform (the same hostility was directed against the Mennonites and other historic peace churches as well). Restrictive legislation by both the federal and state governments was passed during the First World War to deal with conscientious objectors. As a result of this and of overt hostile acts, all of the colonies, with the exception of Bon Homme, moved to Canada. Eventually, many of the colonies returned to South Dakota and other Great Plains states as patriotic fervor diminished and the economy improved.

Besides ethnic and religious prejudice, exacerbated by the

super-patriotism of wartime, there have been more insidious objections to the Hutterites. One of these has been their expansion and subsequent acquisition of land. In Dakota Territory, each homesteader received not only his basic 160 acres, but 160 acres more for planting forty acres of trees, plus an additional 160 acres at \$1.25 an acre. If, initially, each Hutterite family had homesteaded, they would collectively have acquired 12,800 acres of land free, and 6,400 more acres for \$8,000 (Conklin 1964: 46). Neighbors on occasion do confide that they feel the Hutterites own too much land; however, ". . . if each Hutterite family were to have as much land as any other farm colony, most colonies would have to have at least three times as much land as they now own; but since they live together and hold everything in common they do not need this much" (Miller 1975: 11). Because of their lifestyle, the Hutterites are able to live on less than their neighbors and still appear wealthy. They have become integrated into the over-all commercial economy and are subject to outside factors such as prices, government policies, and national prosperity. They are not as self-sufficient as they were in the past, but the diversification of their agriculture assures that much of their foodstuffs are still grown at home.

The problems faced by the individual farmer in this technological age are averted by the Hutterites, whose cooperative system results in available manpower and access to capital for modernization and land accumulation (Flint 1975: 117). Hutterite social organization is such that the demanding and complex business of farming is

more easily and efficiently accomplished by a well-disciplined group than by a single hard-working individual. In times of economic decline, the Hutterites may very well serve as a model for providing more with less.

Summary

The Euro-Americans are the latest inhabitants of the research area. Individuals representing different aspects of this growing industrial nation-state complex entered the project area at different times. First came the fur trader, then the extension of political hegemony through the military, and finally agricultural settlers. The settlers were culturally part of an intensive agricultural system which practiced a mixed crop farming combined with livestock raising. The early pioneer settlers, however, practiced a simple farming routine, relying on wheat and cattle as cash crops. Cheap transportation in the form of the railroad enhanced the value of these products. The Bon Homme Hutterite Colony represents a distinct pattern of a communal agricultural unit. The passing frontier and the increased economic utility of larger farm units has led to a slow population decline and the abandonment of many of the small towns in the area. The most recent chapter in the occupancy of the area has been the damming of the Missouri River. The changes this will have on the region have yet to be determined fully.

VI.

PREVIOUS INVESTIGATIONS

Archeological investigations in the Lewis and Clark Lake area, at least those for which records have survived, have been sporadic and of variable quality. The first work on record is that of W. H. Over in 1919, but his notes indicate that others, probably local amateurs, had preceded him. Over excavated two Woodland period burial mounds in the site later designated as 39YK1, the Yankton Mounds site; his notes indicate that three others had been destroyed by pothunters (Over 1973). He also sampled what has come to be known as the Niobrara Railroad Bridge site, 25KX207. His method of sampling, not mentioned in his notes, was determined in 1964, when Howard and Gant (1966: 24) found the remains of his excavations and performed further excavations. Over excavated a line of four five-by-five foot squares in one spot and a line of three others in another spot. These yielded two historic burials.

Over cannot be said to have conducted an archeological survey in this area. Rather, he sampled a few highly visible sites to which he was led by local informants (Ludwickson, Blakeslee, and O'Shea 1981: 193).

During the Great Depression, a large number of W.P.A.-sponsored excavations were conducted in northeastern Nebraska. For the most part, these were concentrated downstream from Lewis and Clark Lake, in Cedar and Dixon Counties (Cooper 1936; Ludwickson, Blakeslee and

O'Shea 1981: 9-10). In 1937, however, a crew under the general supervision of Earl H. Bell tested two sites, 25KX7 and 25KX8. Site 25KX7, the Larson Deep site, yielded two buried cultural horizons of Woodland affiliation. Site 25KX8, the Larson Mounds site, consisted of a series of low mounds, two of which were excavated. The documentation of this site is especially poor, with various records omitting the section it lies in or mislabelling it; none record the site location more precisely than to the section. A brief summary of the fieldwork indicates that two mounds were sampled, but site forms indicate sampling of either one or three. The field notes do not indicate that any organized survey took place in the project area, just the recording of sites identified by local informants.

The next recorded archeological work in the project area was performed in 1951 by Fenenga and Wood (Fenenga 1953). They reported a grand total of five sites in and near the project area. These included the Yankton Mounds site, 39YK1, previously excavated by Over, the Larson Deep (25KX7), and Larson Mounds (25KX8) sites tested by Bell, and two new sites, 39B0201 and 39YK201. The latter two designations have been abandoned. The legal description of 39YK201 was reversed; it is the same as site 39YK203, the Gavin's Point site. Site 39B0201 has had an even more confusing history. It has also been designated 39B0101 and 39B0203 because the original legal description placed it in the wrong section (it is in Sec. 24). Two different sites are involved, only one of which is on government

land. We propose the following resolution of the problem: site number 39B0201 should be retained and used to label the Tabor site excavated by Hurt; site number 39B0203 should be used to designate a second site found by Huscher in 1956 that is near the Tabor site; the name, Tabor site, should not be used to refer to this latter site.

There is no description of field methods in the report by Fenenga (1953), and the wording of the report suggests that he and Wood actually did not attempt a survey. Rather, the intent of the report was to document that the area had archeological potential. Thus, it is likely that all of the sites in the report were known to them from informants prior to their field visit.

No more organized archeological work was done in the area until the Gavin's Point Dam was constructed in 1955. This differentiates Lewis and Clark Lake from the other reservoirs created in South Dakota in connection with the Pick-Sloan plan. The others were the scene of extensive salvage archeology projects prior to construction. This is particularly important since the lake occupies a unique geomorphic section of the Missouri River trench--the gorge of the Missouri--and because this particular area was the arena for important prehistoric cultural interactions (Wedel 1961: 183-184).

After the filling of the reservoir, several sites were reported to the River Basin Surveys office by federal employees at Lewis and Clark Lake. These individuals were Ansel Petersen and George Kostal.

The sites they reported were later surveyed or otherwise investigated, usually as time permitted, but in one instance as impending destruction dictated. They include 25KX15, 25KX200, 39B0201, 39B0202, and 39B0203. The sites thus reported were highly visible and in areas where Petersen and Kostal happened to be working; thus their discovery did not result from any organized survey.

In 1956, Harold Huscher of the River Basin Surveys investigated two of these sites on the South Dakota shore of Lewis and Clark Lake. These were 39B0202 and 39B0203 (discussed above). Site 39B0202 consisted of only a few pieces of animal bone in an intermittent drainage. Our survey did not turn up anything more than one more piece of animal bone from the same drainage. Thus, this spot has not yet been determined to contain an archeological site.

In 1958, a burial was salvaged during construction of the fish hatchery and wildlife preserve just downstream from Gavin's Point Dam. A partial skeleton with some shell beads and pendants were recovered from a depth of two feet below the surface of the floodplain. This site was designated 39YK202. Apparently, no site report was ever written, and the site was found during construction, not during a survey.

Some limited salvage operations were undertaken at other sites, however. Robert Neuman of the Smithsonian Institution River Basin Surveys office in Lincoln, Nebraska, and Tom Witty, then a student at the University of Nebraska, sampled site 25KX15 at the

mouth of Miller Creek in the winter of 1959-1960. This is one of the sites found by Kostal and Petersen. The published mentions of this work (Howard and Gant 1966: 7; Neuman 1964: 180) are seriously in error. Howard and Gant speak of a lithic site with points similar to those from the Angostura and Big Bend reservoirs. Neuman's discussion also leaves the impression of a preceramic site, although not as early as Howard and Gant imply. Examination of Witty's field notes shows that the excavation determined the site to be a Woodland period camp. It yielded one point (of four) which bears a superficial similarity to Logan Creek (not Angostura) points, but which, because of its well-documented provenience, is certainly a Woodland point. Specifically, a rim sherd from the site indicates an Early Late Woodland affiliation.

Robert Hall salvaged portions of the Gavin's Point Site, 39YK203, in 1961. At the time of excavation, the lake waters had encroached on a large portion of the site; some offshore St. Helena cache pits were excavated by barefoot crew members who used their toes to pull cultural materials from the muck (Hall, personal communication). The onshore investigations yielded an extensive collection of Valley Phase (the original Valley Focus has been redefined as a phase by Ludwickson, Blakeslee, and O'Shea (1981: 121-125). Great Oasis materials, and historic materials that must represent part of Smutty Bear's Yankton village. A brief report of the work was published (Hall 1961), and a more extensive manuscript (Hall n.d.) is in the possession of the author.

In the same year, Wesley R. Hurt (1961) excavated the Tabor site, 39B0201. This site yielded material indicative of a Woodland period habitation. Our survey located a series of depressions at this site which probably represent Hurt's excavations.

The first reasonably adequate survey of the reservoir was performed by Howard and Gant in 1963. Their description of the survey technique used (Howard and Gant 1966: 8-9) indicates that their survey coverage was fairly complete, but no claim of 100% coverage was made. As was typical of the survey reports of that period, there is no discussion of transect spacing and no indication that any shovel testing was done in areas of heavy groundcover.

Howard and Gant revisited most of the previously reported sites and recorded 21 new ones. In Bon Homme County, South Dakota, they reported sites which bear numbers 39B0205 and 39B0209. Of these, only 39B0205 is problematic. The records indicate that this site number has been applied to two different locations and has been associated with three different site names--Colony, Cornfield, and Basingden. One of these locations is east of the Bon Homme Hutterite Colony at the mouth of an intermittent drainage. This has been called the Colony site. Our visit to this spot did not uncover any cultural materials, but conditions were bad enough that this should not be taken to mean that there is no site there. We propose that this spot be designated 39B0205, the Colony site. The other location that had been designated 39B0205 and associated with two site names was relocated by our survey west of the Bon

Homme Hutterite Colony. We located a site on this spot, and because of the confusion about where and what 39B0205 was, we requested and received a new site number, 39B046, for this site. We propose that this new number be used henceforth to designate this site.

Site 39B0206 was a burial found eroding from the face of the bluff. Howard and Gant salvaged what remained of it. We revisited the site location but found no cultural materials.

Site 39B0207 was a habitation site of unknown affiliation on a high terrace near Sand Creek. We visited the spot and found that the site had been destroyed by the Apple Tree housing development.

Site 39B0208 consisted of a very small scatter of material east of the Bon Homme Hutterite Colony. We suspect that this is Howard and Gant's version of the site designated 39B0205, the Colony site. They locate it only to Section 21, and the Colony site lies in that section.

Site 39B0209 was reported as a large lithic scatter of undetermined affiliation on the east side of Emanuel Creek. We found the site in the designated location and recovered a little Woodland pottery as well as lithics from it.

Howard and Gant also found five sites in Yankton County, which they designated 39YK205 through 39YK209. Site 39YK205, a Woodland site, was found to have been destroyed by landscaping activities. A scatter of bone along the beach may derive from the site.

Site 39YK206 consisted of several hearths in a cut bank. Gant and Howard recovered a few pieces of cultural material from the base

of the bank. We relocated the site and observed the hearths but no cultural material was found.

Site 39YK207, a Plains Woodland site, appears to have been destroyed by the construction of a road subsequent to Gant and Howard's survey.

We were not able to relocate site 39YK208; Howard and Gant describe it as consisting of charcoal and bone eroding from cut banks. It may be that the site eroded away between 1963 and 1982.

Site 39YK209, the Lesterville site, is located along the lake-shore at the mouth of an intermittent stream. Howard and Gant located it only to the quarter section, and it took some effort to determine which of two sites in the vicinity was their 39YK209. It is located on the left bank of the intermittent stream at its mouth. It is deeply buried in the cut bank. Howard and Gant recovered Woodland period materials and a burial from it, but we observed (and did not collect) only bison bone. We observed a far less extensive deposit than reported by Howard and Gant; it is likely that the site has been badly eroded.

Howard and Gant investigated sites on the Nebraska shore of the lake, which they designated 25KX201 through 207, 25KX210, and 25KX410. Site 25KX201 was a Woodland site tested by Howard and Gant with negative results. It is now a picnic area.

Site 25KX202 was also destroyed. Howard and Gant found a spot where some pothunters had looted a burial. We relocated the spot but found no cultural materials.

Site 25KX203, the Deepwater site, was located by Howard and Gant on the right bank of a small stream. They tested the site and obtained some Great Oasis material. This spot is now a picnic area, but our survey found an extension of the site on the left bank of the stream which may still hold some important data.

Site 25KX204, the Tramp Deep site, was the focus of a major excavation by Gant and Howard in 1963 and 1964. They found deeply buried Woodland and Archaic components (Gant and Howard 1966: 16-23, Plates 2-11). We visited the site during our survey but found little. The erosion observed by Gant and Howard has apparently continued.

Site 25KX205 is a small ceramic site on a high terrace. Gant and Howard were unable to obtain a precise affiliation for it, but it did produce some body sherds. It is located outside of government property and was not visited by our survey. Site 25KX61, located downslope from 25KX205 and on government property, may be an activity area associated with it.

Sites 25KX206, 25KX207, and 25KX410 are also located outside of government property. None of these were visited during our survey. Site 25KX210 is on government property in the Bloomfield area. Howard and Gant recovered some Woodland material eroding from the lake bank. We revisited the site and found a road had been built over it. There were some fragments of bone on the beach but nothing was observed in the bank. Most of the site has apparently eroded away.

Little archeological work has been done along the shores of

Lewis and Clark Lake since Howard and Gant's survey, and that which has been done prior to our survey has not yielded reports of additional sites on government property. In 1967, Gayle Carlson of the Nebraska State Historical Society investigated a small site, 25KX212, which lies just outside of government property. In 1976, he tested an earthlodge site, 25KX30, in the town of Santee. This site also lies south of government property. No survey was conducted on government property.

On the South Dakota side, the Corps of Engineers conducted a series of in-house cultural resource management surveys. These include four small surveys conducted in 1978 (U.S. Army Corps of Engineers 1978a, 1978b, 1978c, and 1978d), and a larger undated survey done in conjunction with an eagle roost habitat project (U.S. Army Corps of Engineers n.d.). Lionel Brown (1968) of the River Basin Surveys collected and reported materials from the Gavin's Point site. In 1978, Zimmerman and Bradley of the University of South Dakota also conducted limited testing of the Gavin's Point site.

The only major project during this period was a survey conducted by Ned Hannenberger (1980) of the South Dakota shore of the Missouri River from Springfield to Fort Randall. The southernmost end of his project area overlaps the government property around Lewis and Clark Lake. His survey did not yield any new sites within the boundaries of government property, although several were found nearby.

To sum up these previous investigations, it is fair to say:

1) that there was only one large scale archeological survey conducted at Lewis and Clark Lake prior to 1982; and 2) that there was no organized investigation at all prior to the time the lake was filled. Most of the investigations were in response to reports of isolated sites by local informants. The few small scale surveys conducted after the reservoir was filled found no sites on government property. Thus the only survey effort of any pertinence to this study is that conducted by Howard and Gant (1966).

Gant directed the first year of work, Howard the second. A close examination of the report suggests that some errors may have arisen as a result of this. There are some errors in reporting site locations and some inconsistencies in site descriptions. These are discussed in the site inventory. By the standards of the day, however, this was a fairly well-conducted investigation. It yielded 21 sites that had not been reported previously. The fact that our survey reported an additional 44 new sites should not be taken as an indictment of the earlier effort. Just as some of the sites they found had been destroyed by erosion prior to 1982, so others must have been exposed for the first time.

VII.

METHODOLOGY

Field Conditions (see figures 2,3,4 and 5)

Generally, field conditions were excellent for survey. The field season was marked by a number of severe thunderstorms, but only $5\frac{1}{2}$ days were lost to rain. On those days, initial processing and cataloging of specimens was substituted for survey. The rain also forced delays in surveying certain areas because of impassible roads, and on one occasion a squall offered some danger to the boat crew.

Vegetative cover varied considerably from spot to spot and occasionally made site survey nearly impossible. Heavy tree growth was encountered in the uplands at the southeast end of the lake which made control of the surveyors' coverage very difficult. A memorable patch of stinging nettles covered one section of the lowlands. Problems encountered with dense stands of cattails are described below. For the most part, however, the ground conditions consisted of grass or cultivated fields, making for good survey conditions. In most places, the grass cover was not complete and some of the ground surface was visible. The exceptions were in landscaped recreation areas and in a low-lying section near the Bon Homme Hutterite Colony.

Most of the land in the project area is not farmed now and a good deal of it has never been plowed. This is especially true of the rugged bluffs along large portions of the lake shore. Some

of the lowlands were cultivated prior to the creation of the lake, but most of these are covered by more recent sediment. Cultivated fields are restricted, for the most part, to terraces and gentle slopes near major streams. The single major exception is the flat, fairly low-lying upland area surrounding the Bon Homme Hutterite Colony. Only 13 of the 69 sites in the inventory (19%) were found in plowed fields.

Upland Survey Procedures

In accordance with the original Scope of Work, large areas of dissected bluff and blufftop were given 100% coverage. These areas were examined by crews ranging in size from two to eight individuals, accompanied by one or more crew chiefs or supervisory archeologists. While all crew members had at least some archeological experience, crews were briefed extensively on the particular archeological site expressions likely within the project domain, and sites with and without lodge depressions were visited. In addition, supervisory archeologists accompanied crews during the early phases of fieldwork to ensure that survey procedures were properly executed.

The upland area may be divided into three distinct zones, each requiring a somewhat different set of procedures:

- a. cultivated upland
- b. non-cultivated upland
- c. bluff face and shoreline

Sites located in any of these zones were treated in the same way. Where possible, a collection of culturally diagnostic items was recovered; smaller sites were collected fairly exhaustively in order to permit the use of Assemblage Formation Analysis; at larger sites sample collections were made to permit identification of cultural components present. Density of material was noted. An attempt was made to assess the integrity of the site and to determine imminence of threat. The location of the site was recorded on aerial photographs and/or topographic maps, and a sketch map of the site was drawn.

Cultivated Upland: Plowed zones in the upland area were surveyed using intervals between crew members of three to ten meters, depending on field visibility and the extent of the field falling within Corps of Engineers boundaries. Plowed areas within the Uplands were relatively uncommon, however, occurring only in the area of the mouth of Emanuel Creek, and, occasionally, between Apple Tree and the Bon Homme Colony in South Dakota and at the mouth of Lost Creek, Santee, and the Weigand/Burbach recreation area.

Uncultivated Upland: The great majority of the upland area was unplowed and covered in native prairie and scrub forest. These areas were surveyed using varying intervals. Level areas with little or no surface visibility were examined using 50-foot intervals between crew members, with shovel tests every 15 meters. Rarely was it necessary to use so small an interval, since patches of

exposed ground were common and shovel tests were used mainly to fill in gaps between exposures and to test surface disturbances or irregularities. On occasion, shovel tests were used on terraces above drainages where visibility was adequate and the likelihood of sites fairly high. Only one site, 25KX53, was found through shovel testing.

In addition to patches of exposed ground, all cut banks were examined. These cut banks ranged up to 80 feet in height, making close visual examination difficult in some cases. The steep slopes of drainages, while often excluded from the actual survey areas, were also examined for materials which might have eroded from above.

Bluff Face and Shoreline: After pedestrian survey of the uplands, the bluff face and drainage bottoms were examined by crews working downstream by canoe. Besides checking the mouth of each drainage, areas of sand or soil beach were also checked. In some areas, particularly along the Nebraska shoreline from Santee to the mouth of Lost Creek, it was necessary to use a boat to gain access to Corps' property. In these areas, all land surfaces within the Corps of Engineers property boundary were examined by the boat crew.

In some developed areas, such as the series of recreation areas between the Gavin's Point Dam and Gavin's Point itself (the Yankton Boat Basin, Yankton West, Midway Bay, and Gavin's Point units), shovel testing was used with a very large interval (40-100 m.) in order to identify land surfaces which had not been landscaped or stripped of topsoil. The developed beaches were surveyed on foot,

rather than by canoe.

Lowland Survey

In addition to the upland areas described above, the Scope of Work called for the field investigation of some 6,300 acres of lowlands lying at or above 1205 feet amsl (above mean sea level) in the western half of Lewis and Clark Lake. A 25% probabilistic sample of this area was prescribed, from which a statistically valid predictive model of site locations might be derived. In accordance with these specifications, the lowlands were divided into five distinct geographical units (strata) and a variant of a random transect design--constantly oriented transects at randomly spaced intervals--was constructed to sample 25% of each strata.

The choice of transects as a sampling strategy was predicated on their relative efficiency and accuracy as a survey method in rough terrain (Plog 1976: 151), and on their efficacy in covering relatively large areas in an effective and labor-efficient manner. Since all transects were to be of a standard 500-foot width, a 25% sample could be calculated in terms of total transect length (O'Shea and Blakeslee 1982: 34). Transect orientation was to be fixed at 45° east of north.

Unfortunately, the actual character of the low-lying areas differed markedly from their map representation, with the result that major modifications in the sampling program were required. Most notable among these discrepancies was the standing water which covered large portions of the areas marked on topographic

maps as dry ground. In consultation with the Corps technical officer, an alternate survey strategy was developed. It was decided that the survey effort should be directed towards as complete coverage as possible in those lowland areas of non-recent deposition, which were actually above lake level. Accordingly, after some experimentation with the proposed transects, the crews began complete block coverage of those areas suitable for pedestrian survey. In several instances, particularly in the survey of Strata IV, this necessitated access of dry areas via canoe since no approaches by dry land were available. In addition to this coverage, the shoreline of the lowland features was inspected by boat as part of the overall lakeshore survey. These latter efforts were severely hampered by heavy growths of water plants surrounding these features.

With these revisions, the actual field procedures used for the lowland survey converged with those already described for the upland areas. Survey intervals and the frequency of subsurface tests varied with surface visibility conditions.

With this revised survey strategy, approximately 1,300 acres in the lowland areas were inspected out of an originally estimated 6,300 acres, or about 20% of the land area originally calculated. Estimates of area for each stratum are presented in Table 3. Although this figure is less than the 25% sample called for in the original Scope of Work, it is actually a larger proportion (26.6%) of the dry ground in the lowlands. Furthermore, rather than a limited probabilistic sample of a much larger area, the sample

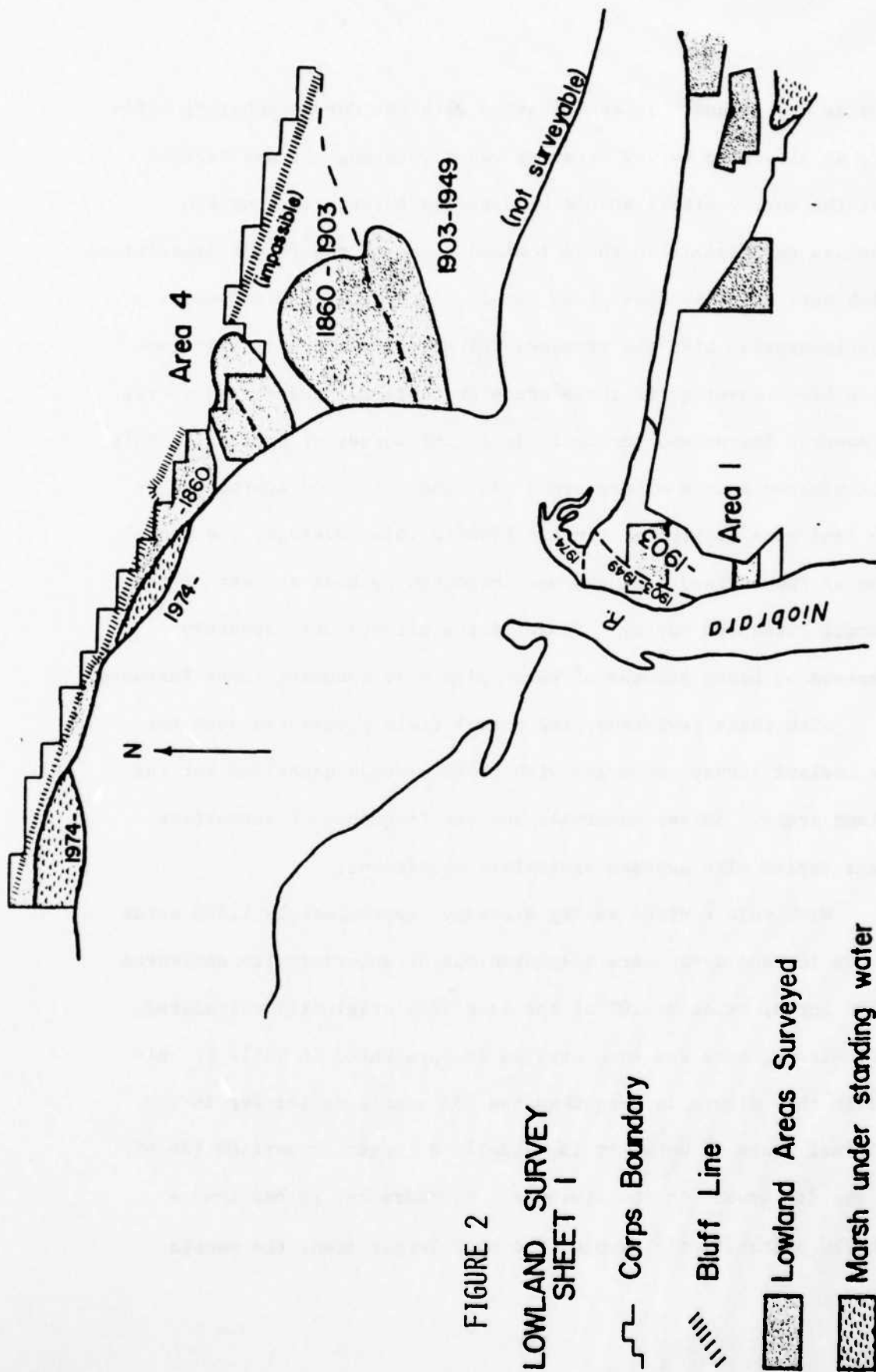


FIGURE 2

LOWLAND SURVEY SHEET 1

Corps Boundary

Bluff Line

Lowland Areas Surveyed

Marsh under standing water

Known periods of Lowland deposition

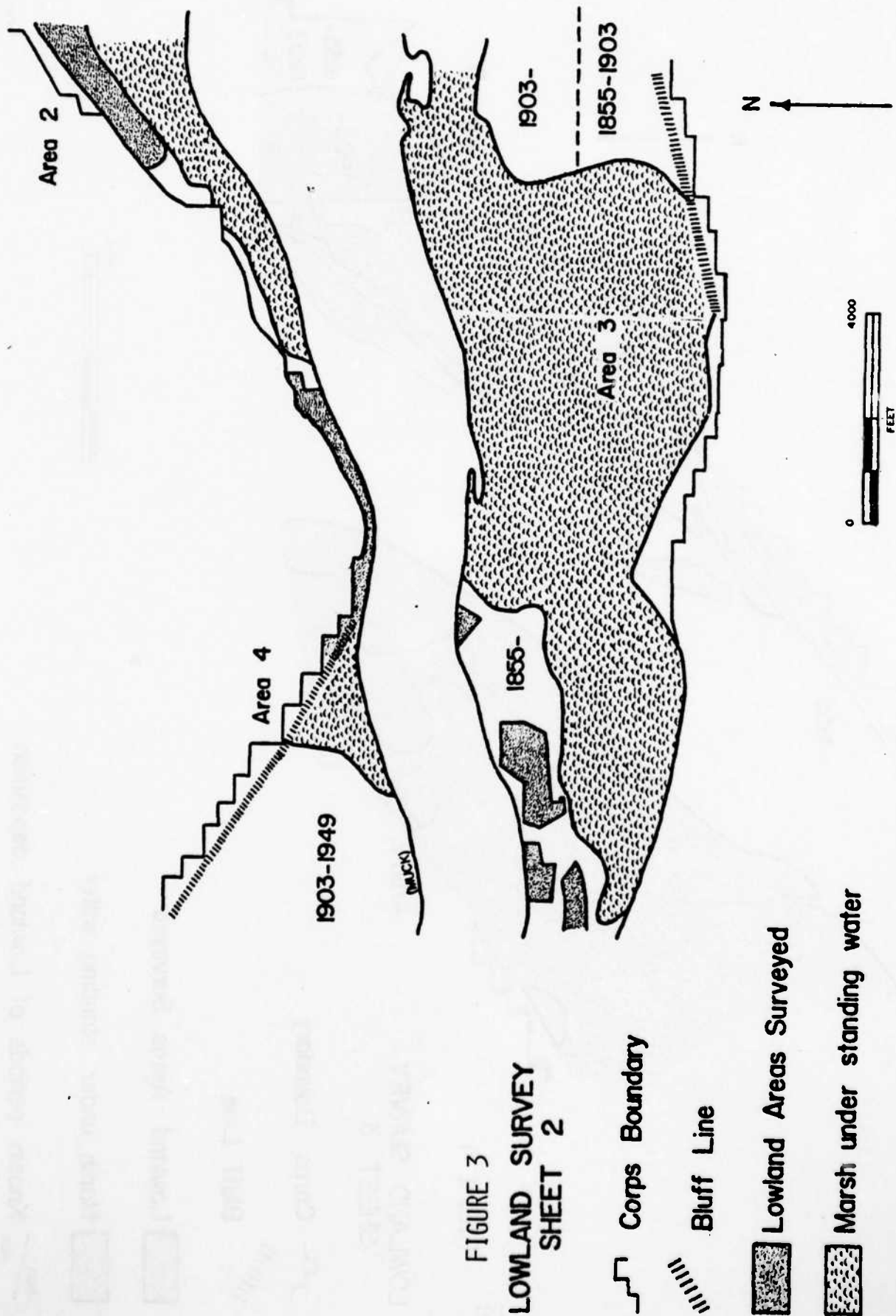


FIGURE 3
LOWLAND SURVEY
SHEET 2

1971 -- Known periods of Lowland deposition

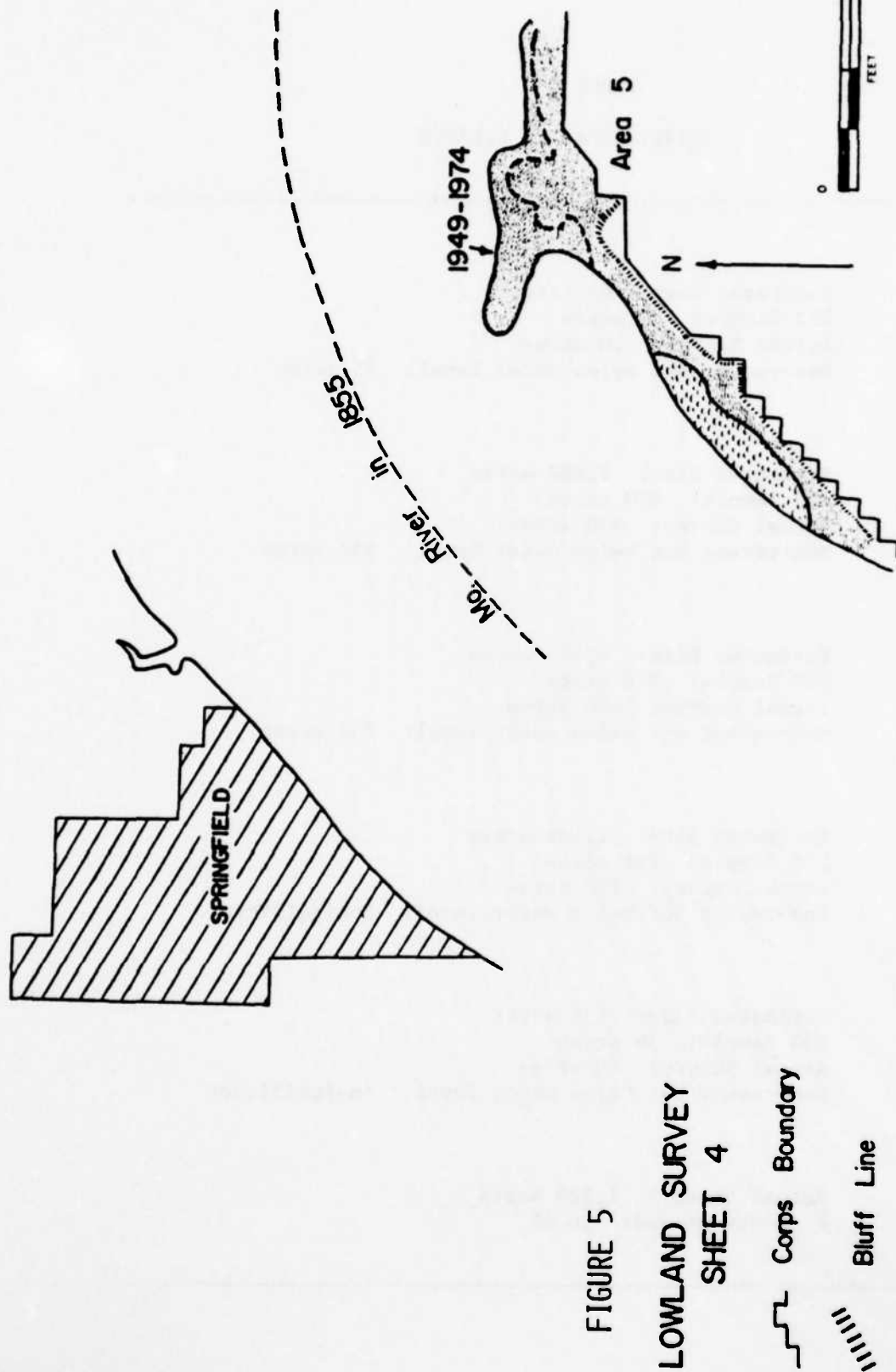


FIGURE 5

LOWLAND SURVEY
SHEET 4

— Corps Boundary

--- Bluff Line

▨ Lowland Areas Surveyed

▩ Marsh with standing water

--- 1974
--- 1949- Known periods of Lowland deposition

TABLE 3
SURVEY AREAS BY STRATUM

AREA 1

Estimated Size: 65 acres
25% Sample: 16 acres
Actual Survey: 10 acres
Non-recent but below water level: 55 acres

AREA 2

Estimated Size: 2,682 acres
25% Sample: 670 acres
Actual Survey: 330 acres
Non-recent but below water level: 957 acres

Area 3

Estimated Size: 2,313 acres
25% Sample: 578 acres
Actual Survey: 600 acres
Non-recent but below water level: 737 acres

Area 4

Estimated Size: 1,166 acres
25% Sample: 291 acres
Actual Survey: 198 acres
Non-recent but below water level: insignificant

Area 5

Estimated Size: 138 acres
25% Sample: 34 acres
Actual Survey: 90 acres
Non-recent but below water level: insignificant

TOTAL

Actual Survey: 1,228 acres
% of dry ground: 26.6%

actually represents nearly complete coverage of those areas which could potentially produce archeological sites of a non-recent date in primary context. This assertion is based on a study of the stream channel changes of the Missouri River recorded between 1855 and 1949.

Prior to the construction of the dams of the Pick-Sloan plan, the Missouri River changed course and frequently had a history of annual flooding. One important aspect in the construction of a predictive model for site location in the lowlands of Lewis and Clark Lake was thus the analysis of historic maps and aerial photographs in order to chart and date potentially significant alterations in the Missouri's course which might, through erosion or deposition, affect site occurrence or discovery. The results obtained from this analysis were dramatic.

Eight maps and a series of aerial photographs ranging in time from 1855 to 1949 were used for this analysis (Table 4). For each map, the main channels of the Missouri were overlain on the modern landscape and the maximum age for a site in primary context was recorded for each area. As the analysis progressed, it became clear that two periods of significant change could be used as datum markers to summarize the overall transformation of the lowlands through time: those areas deposited after 1855; and those deposited after 1903. As noted above, field examination proved large portions of the lowland area to be beneath standing water. It was also clear that significant amounts of alluviation were still taking place, and

it was decided that this field information should be included in the channel change study.

TABLE 4
SOURCES FOR CHANNEL CHANGES

DATE	MAP
1949	U.S. Army Corps of Engineers
1946	Air Photos, U.S. Army Corps of Engineers
1901-03	County Atlases, Nebraska and S.D.
1892	Missouri River Commission (1894)
1881	Wellman (1881)
1867	Howell (1867)
1858-1860	GLO Survey maps for Nebraska and S.D.
1855	Warren (1856)

The results of these studies are presented in Map 1 which shows those areas of deposition that are demonstrably more recent than 1855 or 1903, as well as those areas older than 1855 but currently under water (note that large portions of the more recently deposited alluvium are also submerged, but this has not been included to maintain map clarity). The findings for each of the five lowland areas are summarized below:

Area 1: The small spit of land in the unit designated Area 1 (Stratum I) was found to be completely covered with recent alluvium,

and approximately 90% of its surface is beneath standing water. The pattern of river course changes suggests that sites older than 1855 could occur here in primary context, but if present, they would be buried by an unknown depth of recent alluvium, and would be effectively invisible to surface survey. It is very likely that any such site would be below the water table.

Area 2: Approximately 88% of this area either postdates 1855 or is currently under water. Of this area, the western halves of the NW $\frac{1}{4}$ and SW $\frac{1}{4}$ of Section 10, as well as all of Section 16 (T92N, R60W) may contain sites in primary context predating 1855, but this area was under water at the time of survey. Most of the area south of Section 16 was surveyable.

Area 3: Approximately 60% of this area either postdates 1855 or is presently under water. Much of the downriver portion of this area was deposited after 1855, with the exception of the Bazile Creek area in Section 7 (T32N, R5W). Most of the upstream portion of this land mass predates 1855, and indeed projected far out into what was the main channel of the Missouri River around the turn of the century. Unfortunately, more than half of this area was submerged at the time of survey.

Area 4: Approximately 83% of this area was found to postdate 1855 and must of it actually postdates 1903. The most westerly portion of the area is very recent having been deposited after 1949. Only the central portion of the SW $\frac{1}{4}$ of Section 14 and the SE $\frac{1}{4}$ of Section 15 (92N, R61W) may contain sites in primary context, dating to 1855 or earlier. Surface indications in these areas may

be obscured or distorted by periodic flooding.

Area 5: This area is similar in depositional history to the western half of Area 3. Approximately 45% of this zone, specifically the northern portion of this area, was deposited after 1903. The remaining portion was deposited prior to 1855 and may contain sites of this age in primary context.

These results lead to several interesting conclusions of relevance to the present study. First, the Missouri River has shifted its course frequently in the last century resulting in a complex depositional history for the western portions of Lewis and Clark Lake. An unfortunate result of these course changes is that little, if any, of the presumably extensive prehistoric utilization of these lowland areas will have been preserved in primary contexts, although everything from Paleo-Indian points to modern fishing tackle could be found in redeposited contexts. Fifty-one percent of the lowland areas specified in the Scope of Work (approximately 3,300 acres) were deposited after 1855 and could contain no site in primary context older than this date.

A second observation is that there was considerable discrepancy between the map representation of the lowland zones and their actual condition. Huge areas mapped as dry land (or at least above 1,205 feet amsl) were found to be under permanent bodies of standing water. This was particularly true of recently deposited areas, but even in the more stable lowland areas (pre-1855) almost 1,700 acres (25% of the entire lowland area) were found to be under water.

Most of these areas were covered with a dense growth of cattails, which may have affected the apparent elevation if photogrammetric mapping methods were employed.

A final point of relevance to this historical study is that the lowland areas which are not recent appear to have been subjected to periodic flooding. Such flooding can be expected to obscure any surface indications of human activity which might be present.

This historic analysis of the channel changes of the Missouri River in the Lewis and Clark Lake area, although offering bitter fruit to the archeologist, nonetheless, does allow a rather detailed model for the prediction of site occurrence and age in the lowland areas, even in the absence of field survey. The model is summarized in Map 1 and provides a relatively precise and specific terminus post quem for any materials in primary context within the lowland areas.

This study also highlights several sources of systematic bias which may affect pedestrian archeological survey in those areas of non-recent deposition. Many of these areas are under standing water which precludes survey, while much of the rest has been subjected to periodic inundation which may distort, obscure, or even completely mask indications of human activity. The negative results of the lowland field survey should be considered in light of this latter possibility.

The findings of this study suggest that there is a very low probability for the discovery of significant archeological sites in primary context within the confines of the lowlands, due both to

the rapid destruction and accumulation of the lowland features themselves and to other natural processes which operate to obscure surface indications in the more stable areas.

Air Imagery Analysis

Prior to the start of fieldwork, air photo coverage for the Lewis and Clark Lake project domain was screened to identify potential site locations which might be missed in the course of normal pedestrian survey, particularly sites occurring in uncultivated areas. Air imagery analysis was conducted by Ms. Sandra Laney of the University of Nebraska Conservation and Survey Division. The imagery sources utilized for this analysis are presented in Table 5.

TABLE 5
IMAGERY SOURCES

SOURCE	COVERAGE AREA	DATE	TYPE
United States Army	Missouri River	July, 1974	Black & White
Corps of Engineers	Channel	Mar. & June 1946	Photos
Conservation and	Knox County	June & July 1951	Black & White
Survey Division,			Photos
Lincoln, Neb.			

All areas showing indications of cultural disturbance were mapped using USGS quadrangle overlays. Table 6 lists locations within the U.S. Army Corps of Engineers property boundaries of Lewis and Clark Lake of potentially significant features identified through aerial imagery analysis. Locations falling outside the project boundaries, but near identified sites or find spots, have been included although most were not field checked. Areas with positive surface indications were given special attention during pedestrian survey with resultant discovery of three sites.

To assess these results and the general value of air imagery analysis as an element in cultural resource survey, it is important to consider both the types of sites located and those not identified using this method. Although the analyst has had previous experience in the identification of archeological features in the region (see Ludwickson, Blakeslee, and O'Shea 1981), she was supplied with no advance information as to known site locations within the project domain. Her analysis, therefore, constitutes a 'blind' test of site locations using aerial imagery analysis.

Of the 11 positive surface indications listed in Table 6, field examination proved three to be sites, five others produced negative results, and the remaining three, while not field checked, appear to correspond to sites identified during prior pedestrian survey. Of the areas producing negative results, two represented recent soil disturbances (e.g., scraping), and two more represented linear patterns which possibly indicate the course of early roads

TABLE 6

AIR IMAGERY ANALYSIS RESULTS

LOCATION	USGS QUADRANGLE	DATE/FRAME	COMMENTS
<u>Knox County Neb.</u>			
Sec. 23, T33N, R4W	Bon Homme Colony	1974 GRT-1-5-83	Just beyond USACE boundary; very close to find spot. No field check.
Sec. 21, T33N, R3W	Bon Homme Colony	1974 GRT-1-5-87	Near 25KX201. Field check negative.
Sec. 20, T33N, R3W	Bon Homme Colony	1946 Sheet 3	Linear marking trending NW/SE. Field check negative.
Sec. 18, T33N, R4W	Santee	1974 GRT-1-5-81	Field check positive; site.
Sec. 4, T32N, R5W	Springfield	1974 GRT-1-7-132	Field check positive; site.
Sec. 7, T32N, R5W	Springfield	1951 BNE-2H-38	Marks in field, Field check positive, at least two surface depressions. Site.
Sec. 8, T32N, R6W	Niobrara	1974 GRT-1-8-140	Linear features. Field check (including shovel tests) negative.
<u>Yankton County, S.D.</u>			
Sec. 17, T93N, R57W	Tabor SE	1974 GRT-1-5-89	Field check negative; recent soil disturbance.
<u>Bon Homme County, S.D.</u>			
Sec. 22, T93N, R58W	Bon Homme Colony	1974 GRT-1-6-110	Outside USACE boundary. Near site 39B0205.
Sec. 19, T92N, R60W	Springfield	1951 BNE-2H-51	Field check negative; recent soil disturbance.
Sec. 24, T92N, R61W	Springfield/Niobrara	1974 GRT-1-8-142	Outside USACE boundary, near find spot.

or trails. Of the positive identifications, all three occurred in uncultivated upland settings. These constitute the positive benefits of the analysis. Alternatively, the great majority of sites now known to exist around the perimeter of Lewis and Clark were not identified by aerial photo analysis.

The implications of these results are twofold; first, air imagery interpretation cannot provide anything approaching a comprehensive survey of sites in areas such as Lewis and Clark Lake, and thus cannot be used in lieu of pedestrian survey. Indeed, the results of the present experiment suggest that most air identifications become interpretable only when the specific locations have been field checked. It should be added, however, that the aerial photographs supplied for use under the present contract were less than optimal for aerial imagery analysis, since the flight path was centered on the river channel and did not provide vertical coverage of the land surfaces of specific interest.

The second and perhaps more important implication of the present experiment is that air imagery analysis, even with poor photo coverage, is capable of discovering sites; and that these site locations tend to be those posing the greatest difficulty for normal pedestrian survey due to physiographic setting and limited surface visibility.

These results suggest that air imagery analysis is a technique which compliments but cannot replace normal field survey. Such analysis is particularly useful due to its capability to identify those classes of sites easily eluding detection in ground survey.

Research Questions

In order to assess the significance of the sites found during this survey, it is necessary to review the research priorities appropriate to this region. It happens that a set of such questions was developed in conjunction with an overview of the Native American cultural resources of the Missouri National Recreational River (Ludwickson et al. 1981: 204-236). This is the section of the Missouri River between Gavin's Point Dam and Ponca, Nebraska, i.e., just downstream from the project area. The research questions developed there are thus applicable to Lewis and Clark Lake. Furthermore, we are inclined to agree with this research program, since we helped to formulate it.

Rather than to repeat what was written by us only a short time ago, the main research questions are summarized here. In addition, we offer some research questions regarding the historic period, an era outside the scope of the previous work.

Chronology: There is a clear need for more adequate control over chronology in this region. The exclusive use of radiocarbon to obtain dates and far too simplistic interpretations of these dates have caused considerable problems in the interpretation of the archeological record. More and varied kinds of dates, including thermoluminescent and archeomagnetic assays are needed.

Paleoecology: Faunal analysis, palynology, analysis of other vegetal remains, and geomorphological studies are needed in order to determine the nature of the prehistoric environments with which

the cultures of the region interacted. Sites which contain bone, vegetal remains, gastropods, and the like would be of value as would sites associated with terrace deposits, paleosols, and other critical geomorphic features. Any sources of information which have direct implications for paleoclimatology (e.g., tree rings) would be of importance.

Culture History

Some readily identified problems of culture history include determining the nature of the Late Woodland to Central Plains Tradition transition; the relationship between St. Helena and Mill Creek; the transition(s) and/or intercultural relationships among Great Oasis, Mill Creek, and Oneota; the nature of Great Oasis lifeways; the origins of the Coalescent Tradition; St. Helena chronology; the nature of the Valley Phase and its relationship (or lack thereof) with the Hopewellian Interaction Sphere; and documentation of the protohistoric and early historic sites of the region.

Physical Anthropology: The opportunities here are enormous when adequate samples are available. They include paleodemography, paleopathology, indicators of stress and nutritional status, craniometrics, pre- and post-mortem cultural modifications of human bone, growth rate analysis, and trace element and isotope analysis of bone. Any site which yields human bone is thus of potential significance; those which may contain large skeletal populations are

are highly important.

Human Behavior: There are a variety of research topics which can be considered under this label. We know far too little of prehistoric exchange systems; thus any site which contains trade goods in coherent contexts is of some importance. Mortuary behavior is of interest as well. Sites which contain mortuary remains are of importance in this regard in addition to the biological information they may yield. Any sites which yield clear evidence of seasonality should be given careful consideration, since we know all too little about the seasonal round of any of the prehistoric groups of the region. Sites which yield clearly definable house remains and activity areas can yield important information. In spite of the excavation of many such sites, we know little of their internal organization because of the ways in which they were excavated. Thus the potential of such sites has not yet been realized. We do not yet even have well-documented assessments of the size of the human communities which created these sites. Settlement patterns on a regional scale and the relationships between contemporary sites are also relatively understudied.

Historic Sites: The project area was the home of the Ponca, Santee, and Yankton during a very difficult period in their histories. It should contain sites of ages ranging from the 18th century through the reservation period, and these should record important cultural changes. This period has not received sufficient archeological attention. Neither has the early Euro-American settlement of the

region. Nineteenth century homesteads and towns would be interesting to contrast with Native American allotment houses and villages.

VIII

INVENTORY

Introduction

This inventory of sites at Lewis and Clark Lake includes discussions of both the sites found by our survey and sites reported by previous surveys but not relocated by us. It does not include sites known to be outside the project boundaries but does include several whose locations were poorly reported, and which we could not demonstrate lay outside the project boundaries.

NEBRASKA SITES

25KX7 The Larson Deep Site

This site was found in 1937 by a crew from the Laboratory of Anthropology of the University of Nebraska. No report was ever published. It was found exposed in a gully wall in a narrow valley which fed into the Missouri River trench from the south. The gully had cut deeply into the valley floor exposing old soil horizons. Cultural materials were observed in these at two spots along the gully. In one of these spots, a hearth was exposed at the top of the upper horizon. This stratum lay 12 feet below the valley floor. It consisted of an area of baked earth 4 inches thick and 26 inches in diameter. It contained a few pieces of charred bone. The lower stratum lay one foot below the upper horizon. It contained a concentration of broken animal bone 4 inches thick and 39 inches in

diameter. This material lay 45 feet from the Missouri River, just inside the mouth of the ravine.

Approximately 100 feet further up the ravine, the same strata yielded animal bones, and some thick grit-tempered pottery, and a side-notched dart point. This cultural material is of the Woodland period, and its deep burial in a terrace deposit is reminiscent of other Woodland period sites on the shores of Lewis and Clark Lake. Deposits of broken animal bone suggestive of the manufacture of bone grease are found in several of them.

The site was revisited in 1982, but only after a great deal of effort was made to relocate it. The site records give an incorrect section number, and not all of the records provide that number. This is of some interest because it indicates that neither Fenenga and Wood nor Howard and Gant revisited this site. Fenenga and Wood's data consists entirely of information copied from the original site forms. Howard and Gant omit this site from their reservoir map, presumably because the original legal description places it in the middle of the Missouri River.

Using the field maps for both 25KX7 and 25KX8 and documents in the office of the Knox County Register of Deeds, the search was narrowed to two drainages numbered 8 and 10 in the field notes of our survey. The search of drainage 8 proved negative, even though its shape as seen on the Springfield Quad map is similar in some respects to the original field map. The adjacent uplands, however, do not resemble the field map for 25KX8. Drainage 10 appears slightly

less like the valley on the 25KX7 field map, but two locations in the uplands appear similar to the field map for 25KX8. Furthermore, some cultural material was observed in a location corresponding in some respects to the observations made at 25KX7 in 1937. Bone, burned earth, and charcoal were observed exposed in the east wall of a ravine in two spots, separated vertically by 0.6 meters. The field profiles made in 1937 show two strata separated by 12 to 25 inches (.3 to .65 m.). No identifiable bone and no artifacts were observed, and the material observed was left in place.

The appearance of the site in 1982 was not suggestive of a rich deposit, but the site may gain some significance in a study of the deeply buried Woodland period camps along this shore of the lake. Cleaning of the gully wall would allow a better assessment of its potential. It would also provide an inexpensive opportunity for a geomorphologist to study the terrace sequence, and it may be possible to obtain enough bone and/or charcoal for a radiocarbon date for each of the two cultural strata. This would allow some estimate of the rate at which the terrace deposit accumulated.

25KX8

This site apparently does not lie on government property, but that fact was not clear from the original site records. Most of these mislocate both this site and 25KX7. Furthermore, the descriptions of 25KX8 are so inconsistent that a brief description of the site is given here, based on the field map and a brief description of the

excavation found at the University of Nebraska.

The site lies high in the bluffs overlooking the Missouri River and consists of an undetermined number of burial mounds and/or natural knolls scattered over an area of unknown extent. The largest mound or knoll lies approximately 200 feet south of the bluff edge and is 28 feet in diameter and 16 inches high in the center. The second most prominent feature was 18 feet in diameter and 8 inches high. It lies 50 feet southeast of the first. The remaining features were smaller and less distinct; four of the eleven shown on the site map are labelled with question marks.

The field report describes excavations in the largest two features and mentions only that a single sherd was recovered from a third. A unit measuring 10 by 12 feet was excavated into the largest feature to a depth of 16 inches. This yielded a single bundle burial consisting of two femurs, one broken tibia, two scapulae, the pelvis, and some ribs and vertebrae. It was associated with a reconstructible Valley cord-roughened vessel. An excavation in the second largest feature measured 6 by 11 feet and extended to a depth of 18 inches. It exposed a single bundle burial containing portions of two individuals: two crania, one mandible, three femurs, two tibias, and one humerus. Three potsherds were also found.

Searches for this site on government property above drainages 8 and 10 did not locate this site. Examination of an area south of drainage 10 on Santee Reservation land (done with the permission of the tribal manager) yielded one spot which could represent the site.

Several disturbed areas which could represent the original excavations were noted, but the evidence for the remaining "mounds" was unconvincing. Indeed, it is not self-evident that the features described in the field report are artificial mounds as opposed to natural features. The report mentions no features within the mounds nor any sign of a buried soil horizon.

25KX15

Description

This site is located on the right (east) bank of Miller Creek. It originally appeared as a dark zone buried 3 to 5 feet below the terrace surface which extended for about 30 meters along the cut bank. It was investigated in February, 1960, by Robert Neuman and Tom Witty, because of impending destruction from construction activities. Heavy equipment was used to remove the frozen overburden from a large area, and a series of smaller excavation units were then made with shovels and trowels.

The excavations recovered two sherds, four points, six scrapers, four bifacial knives, a small amount of lithic debitage, broken animal bone, and fire-cracked rock. One sherd is a Woodland rim, 11 mm. thick, nearly vertical and slightly outcurving. Chevrons are incised into the flat lip. The other sherd is a small body sherd.

The points are also consistent with a Woodland component. All are small, 25 to 47 mm. long. One is triangular with a concave

base; one has side notches very low on the blade and a concave base; one is corner notched with a convex base; and one has shallow side notches and a concave base. The scrapers are small and stubby. One obsidian flake was found.

The animal bone appears to have been purposefully smashed, apparently to make bone grease. Bison remains dominate the materials identified by Witty, but a minimum of two animals may be present. The other faunal materials were identified as representing a small carnivore, an amphibian, a bird, and a deer.

The site clearly represents a Woodland period site. Unfortunately, it has been misidentified several times in the literature as an early Archaic site. Neuman suggested that the triangular point was similar to some classified as DeLong points by William Irving, with a suggested date of 3,000 to 10,000 B.C. (Neuman 1964: 180). He made no mention of the pottery found with this point. Howard and Gant (1966: 7) followed Neuman's lead and identified the site as early Archaic and made reference to points similar to some from Big Bend reservoir (where Irving worked) and to Angostura reservoir, apparently because of a confusion between DeLong points and Long (or Angostura) points.

In summary, site 25KX15 was a small Woodland site which was destroyed by construction. It may have been an activity area associated with 25KX201. We visited the spot during our survey but found nothing. Field notes and the specimens from the 1960 excavation are at the University of Nebraska. Field photos are on file

at the Midwest Archaeological Center. (We thank John Ludwickson and Thomas Thiessen for the help they gave in unraveling this mystery.)

25KX52 (6382A)

Description

This site is located in a borrow pit on the east bank of Weigand Creek, well upstream from the mouth. Artifacts such as ceramics, lithics, and bone were recovered from the cut bank and floor of this borrow pit. The material recovered from the cut bank came from a depth of about 1.5 m. below present ground surface. One of the pieces of ceramics recovered was a Great Oasis rim sherd.

Collection

- A. One Great Oasis rim sherd with parallel diagonal lines on the lip-rim juncture, and parallel horizontal lines overlaid by double line pendant triangles and a "corn plant" motif on the rim panel.
- B. Four body sherds with medium-fine grit temper.
- C. One broken bifacially flaked tool made of heat-treated chert. This tool does not exhibit any use wear.
- D. One spall of heat-treated chert.
- E. Two completely charred bone fragments, and one partially charred bone fragment.
- F. Six unidentified bone fragments.

G. Three split bison phalanges.

Discussion

A Great Oasis component is definitely present at this site. The presence of the ceramics, which represent a minimum of three pots, indicates an occupation of more than an ephemeral nature.

Fire is indicated directly by the presence of heat-treated flakes and burnt bone. This makes the possibility of recovering dateable materials, such as charcoal and heat-treated flakes, rather high.

The burnt bone also indicates an association of human activity with faunal remains. This is substantiated, as well, by the split bison phalanges.

Recommendations

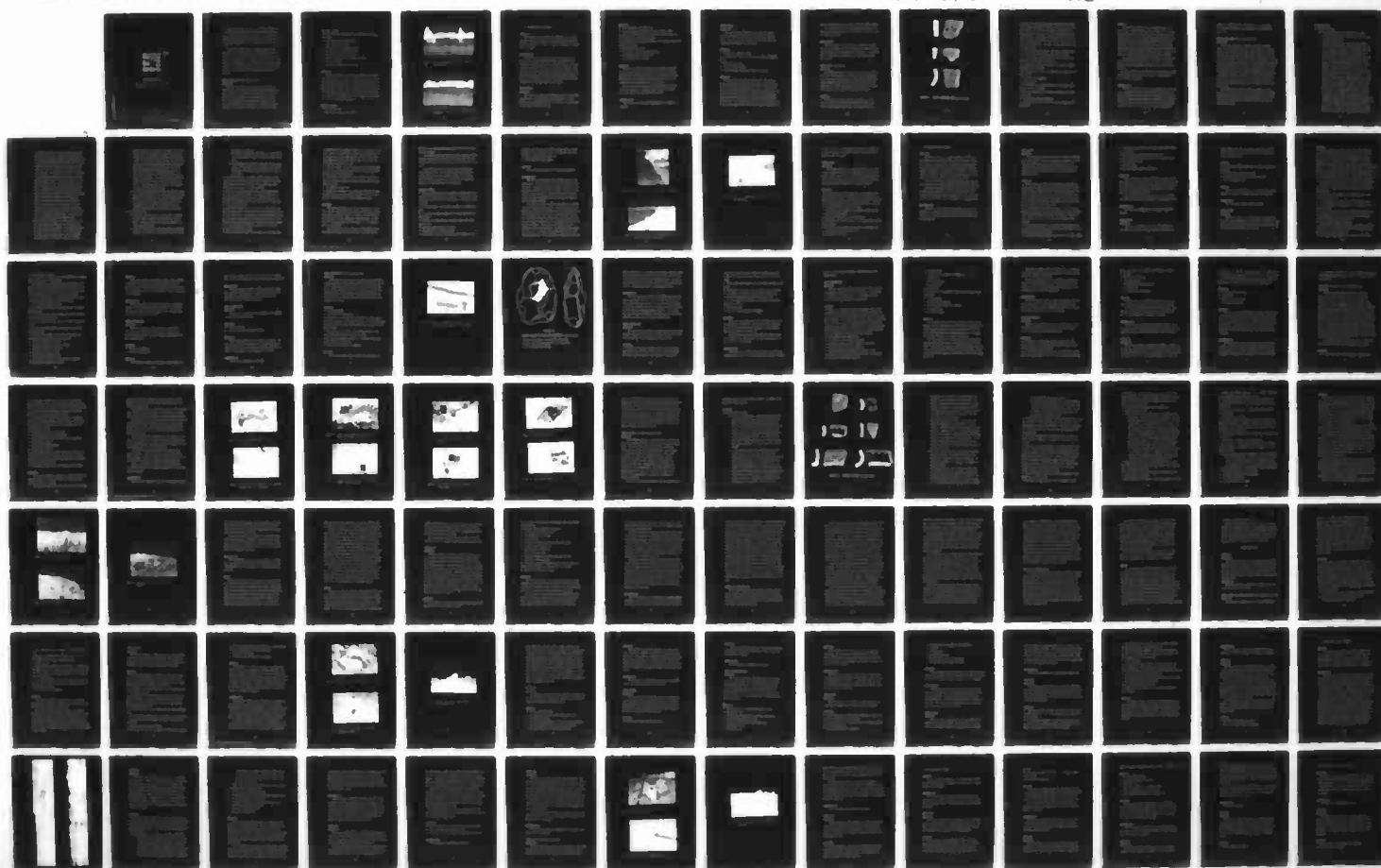
The apparent presence of a substantial Great Oasis component approximately 1.5 meters below the present surface makes this site appear to have considerable potential. Continuing damage from erosion is probably minimal, but continued use of the borrow area could endanger the site. It should be prohibited. The presence of the borrow pit should make testing of the site fairly inexpensive. A portion of the borrow pit wall can be cleared to obtain a profile of the site and information about its geomorphic context. This profile should be continued below the Great Oasis component by excavation into the floor of the borrow pit. The profile should

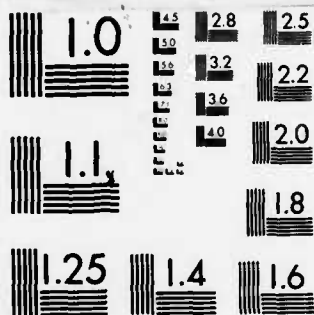
AD-A139 118 THE GORGE OF THE MISSOURI: AN ARCHEOLOGICAL SURVEY OF
LEWIS AND CLARK LAK..(U) WICHITA STATE UNIV KS
ARCHAEOLOGY LABS D J BLAKESLEE ET AL. MAY 83
UNCLASSIFIED DACW45-82-C-0098

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

be at least three meters long in order to provide an adequate view of the geomorphic context and to provide a reasonable opportunity for uncovering cultural materials and features. If any such items are exposed in the profile wall, a two-by-two meter test square should be excavated to sample the sorts of information obtainable from the site.

This minimal excavation should be supplemented by a coring program in order to determine the site limits, both horizontal and vertical. One- or two-inch cores taken at a 10-meter grid interval should allow assessment of the approximate site limits and of the density of cultural material. Properly done, such a coring program would be combined with contour mapping of the site surface so that the vertical relationships of the subsurface deposit(s) may be assessed.

25KX53 (6382B, 6382C) (see figures 6 and 7)

Description

This site is located on two meander scars to the east of Weigand Creek, near the entrance to the Weigand Creek Recreation Area. Material such as flakes and a shell bead were recovered when shovel tests were dug on these meander scars to a depth of 20 cm. No cultural material was discovered when shovel tests were executed between the two meander scars. Flakes were noted eroding from the surface of the meander scar at location 6382B.

Collection (6382B)

- A. Three cord-roughened body sherds with medium-fine to medium grit temper.
- B. Six flakes of red silicified stone.
- C. Eight flakes of white chert.
- D. One flake of gray fossiliferous chert.
- E. One chunk (core?) of light gray chert.
- F. One chunk of Bijou Hills quartzite.
- G. One possible flake made of a basalt-like stone.
- H. One possible cinder.
- I. One piece of enamel from a bison tooth.

Discussion

None of the ceramics can be used for a definitive assignment of cultural affiliation. No fire is indicated by this collection, thereby reducing the possibility of directly dating the site. The high percentage of flakes, many of them primary or secondary decoration flakes, indicates that at least one activity at this site was the manufacture of stone tools. Some chert was either traded for or the group was somewhat mobile, since the gray fossiliferous chert is local to southeast Nebraska.

Collection (6382C)

- A. One shell disk bead.
- B. Three flakes of various local stone.

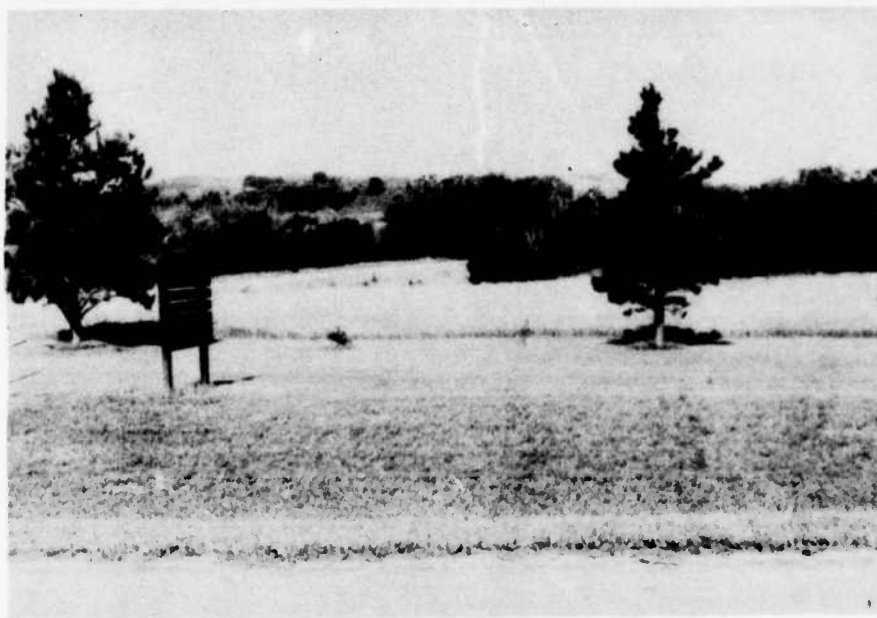


FIGURE 6. View to the southwest, of the first meander scar of 25KX53.



FIGURE 7. View to the southwest, of the second meander scar of 25KX53.

C. One non-diagnostic bone fragment.

Discussion

Once again there is no evidence of datable materials such as charcoal or heat-treated flakes. The site does not show much evidence of a substantial occupation. Lithic tool production is hinted at by the flakes.

Recommendations

The small collections obtained from this site do not allow much in the way of assessment at this time. Its potential must be regarded as unknown. There is no substantial threat to the site; therefore, testing of it can be given a fairly low priority. Testing, when it occurs, could consist of four test pits to assess site extent and richness. In combination with more extensive testing of other sites and geomorphic assessment, this should provide adequate information about the approximate age of the site.

25KX54 (6482E)

Description

This site is in a plowed field immediately south of the Burbach Recreation area and immediately west of Weigand Creek. Several flakes, a cord-roughened body sherd, and a grinding stone were found on the surface of this plowed field.

Collection

- A. One large metate, or grinding stone.
- B. One cord-roughened body sherd with medium-fine grit temper.
- C. One brown chert flake with fine retouch on alternate sides. Use wear is indicated on both retouched edges.
- D. Eight flakes of red silicified sediment, two of which are secondary decortication flakes.
- E. Two flakes of white chert.
- F. One chunk of heat-treated lithic material.
- G. One possibly flaked piece of shale.
- H. One unidentified bone fragment.

Discussion

The body sherd and metate suggest a fairly lengthy occupation. The possibility is high that more sherds could be found, allowing determination of cultural affiliation. Fire is implied by the heat-treated chert, which suggests that datable material such as charcoal and/or heat-treated flakes, could be recovered.

As far as on-site activities are concerned, we have few clues. Lithic tool production is indicated by the decortication flakes. The metate suggests the processing of plant foods.

Recommendations

Since this site is located off Corps property, no testing is required.

25KX55 (6482D)

Description

This site is located between the entrances to the Burbach and Weigand Creek Recreation areas, on the west bank of Weigand Creek. The area here is a plowed field from the surface of which lithics and bone fragments were recovered.

Collection

- A. One core tool, possibly a knife.
- B. Two flake tools. One is a biface, and the other is possibly a punch.
- C. Three utilized flakes.
- D. Four non-utilized flakes.
- E. One bone fragment, possibly a portion of a deer rib.

Discussion

At least three of the lithics (the core tool, one utilized flake, and one non-utilized flake) retain cortex. This would indicate that the tools were being made on the spot. The high proportion of cutting tools indicates the processing of some material, and the fact that fifty percent of the tools recovered are expendable utilized flakes indicates again that tools were being prepared for expedient use. Heat treatment is evident on at least two flakes, but this could have been done at a time prior to their utilization. The

one bone fragment may give us a clue as to what was being processed.

It is likely that this was a butchering site and, as such, it does not have a high probability of being dated or of being assigned to a particular culture.

Recommendations

This site appears to have fairly low potential for yielding significant information, and the only threat to it consists of continued plowing. A testing program need only consist of a controlled surface survey to map it properly and to collect another sample for analysis.

25KX56 (6882A) (see figure 8)

Description

Site 25KX56 is located on the west bank of the mouth of Devils Nest Creek. The site itself is located in a road cut descending from a high terrace overlooking this stream. Several Woodland rim sherds, resembling Valley Phase wares, were recovered along with lithic debris and bone. The deposit was found to be 1.6 m. below ground surface, but its boundaries were hard to determine.

Collection

A. Four Woodland rim sherds, possibly Valley Phase: 1) Two rims with parallel diagonal lines on the lip-rim juncture with punch and boss decoration below that. The wide flat lips are

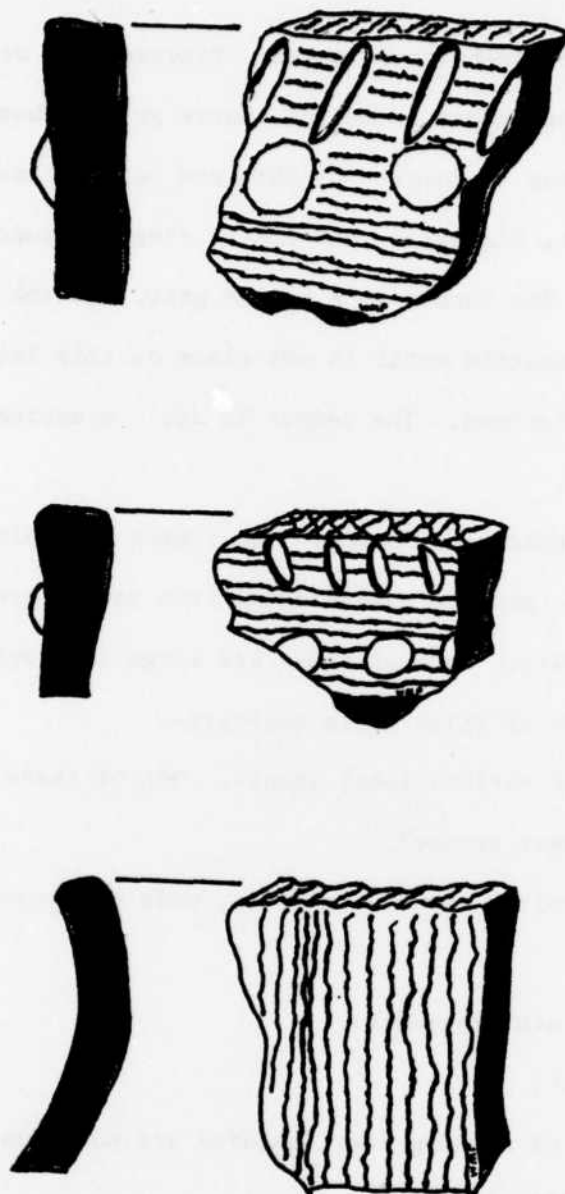


FIGURE 8: 25KX56: WOODLAND RIMS (ACTUAL SIZE)

decorated with a cross-hatched design. Fingerprints are present on the bosses. The temper is medium coarse grit in both of them. Both sherds are gray in color. 2) This rim has vertical cord-marked lines on the rim panel, and linear diagonal punctates on the squared lip. The temper is a medium grit, and the color is gray. 3) The decorative motif is not clear on this last rim, but the lip has indentations. The temper is again a medium grit, and the color is gray.

B. Seven cord-marked body sherds. The temper is medium-coarse grit in all seven, and the colors range from tan to gray.

C. Two end scrapers. Both of these are large (3.5 and 3.8 cm, long) and are made of Bijou Hills quartzite.

D. Nine flakes of various local stones. One of these flakes has definitely been heat treated.

E. One small prismatic core, 4 cm. long, made of a common red silicified stone.

F. Four bison tooth fragments.

G. Two deer teeth.

H. One fragment of a young deer (sutures are not closed) skull. The antler is still attached.

I. Two bison vertebrae. All the spinal processes and ribs have been cut off.

J. One bison left metatarsal fragment.

K. Thirty-one other bone fragments, both deer and bison are well represented.

Discussion

This site was occupied at least once by people related to the Valley Phase. A possible later occupation is hinted at by two body sherds which are thin and well fired, outside the norm for Middle Woodland ceramics. A late autumn to early spring occupation can be inferred from the deer skull fragment complete with a portion of the antler. The rest of the antler appears to have been removed, associating this skull with human activity. Also associating faunal remains with human activity are the bison vertebrae. The spines and ribs, i.e., the major meat-bearing portions, have been removed.

The presence of heat-treated chert, along with the postulated winter occupation, would argue for the use of fire. If fire was present, it would be possible to accurately date the occupation at this site.

This site could be of some importance in understanding the Woodland peoples of this area and, more directly, to understanding winter subsistence patterns.

Recommendations

This site is deeply buried and is not threatened at the present time. It appears to contain well-preserved bone and shell, which were found eroding from the road cut. The presence of the road cut means that the site can be investigated inexpensively. The road cut should be cleaned to obtain a profile of the site and to determine its extent, where it is cut by the road. The profile should be

examined by a geomorphologist. Coring in a line at right angles to the trend of the road cut should determine the other boundaries of the site.

25KX57 (6482A, 6482C) (see figures 9,10 and 11)

Description

This site is located on both banks of the mouth of Weigand Creek. The site (6482A) consists of a heavy deposition of cultural materials such as ceramics and lithics, which extends for a distance of 50 m. along the east bank of Weigand Creek. The other portion is on the opposite bank. The site seems to be centered along the original bank of the stream, and it extends into Lewis and Clark Lake. Material is being washed ashore by wave action, but several shovel tests which were executed along the shore indicate an in situ deposit at a depth of around 70 centimeters. Great Oasis ceramics make up the majority of the ceramics recovered from this site. St. Helena ceramics were recovered from this site (and others in the Weigand complex), and constitute the westernmost known location of material from this cultural complex.

Location 6482C is also part of this site (25KX57), and this location is on the west bank of the mouth of Weigand Creek. Similar materials were noted from this site which extends 15 m. south along the bank of the creek and 15 to 20 meters west along the shore of Lewis and Clark Lake.

Collection (6482A)

A. Eighteen rim sherds:

- a. Great Oasis Wedge Lip, with medium fine grit temper.
- b. Two Great Oasis Wedge Lip, with fine grit temper; the color is a uniform light gray.
- c. Nine Great Oasis High Rim: 1) High Rim with parallel horizontal lines forming the background on the rim panel with two crossed lines forming an X superimposed over them. Parallel diagonal lines mark the lip-rim juncture. 2) Horizontal parallel lines with one diagonal line, possibly part of a pendant triangle design, form the rim panel design. Parallel diagonal lines mark the lip-rim juncture. Temper is a fine grit, and the colors are tan on the exterior and black on the interior. 3) The rim panel is once again marked by horizontal parallel lines. This time they are accompanied by two parallel diagonal lines, again probably part of a pendant triangle design. The lip-rim juncture is again designated by parallel diagonal lines. The color is an overall black-dark gray, and the temper is a fine grit. 4) Again parallel horizontal lines mark the rim panel. The remains of two double line pendant triangles are visible. The lip-rim juncture is again marked by parallel diagonal lines. The temper is a medium fine grit. 5) This rim is somewhat different in appearance from the others. It does have the typical parallel horizontal lines on the rim panel, but these end about one-third of

the way down from the top, and are followed by parallel diagonal lines which are the remains of triangles. The lip-rim juncture is again marked by parallel diagonal lines, but they are longer and deeper than normal. This rim has a definite outward curve which is also contrary to the norm. The temper is a medium fine grit, and the color is a light tan. 6) This rim is red in color. It has the typical horizontal parallel lines on the panel, and the parallel diagonal lines on the lip-rim juncture. No further decoration is noted. The temper is a fine grit or sand. 7) and 8) These two rims have the same decorative motifs, consisting of the familiar parallel horizontal lines on the panel with double line triangles. Once again, the lip-rim juncture is marked by parallel diagonal lines. The colors are black and gray. The temper in both is a fine grit or sand. 9) This sherd is tan in color and has a fine sand or grit temper. The design consists of the parallel horizontal lines, this time overlaid by a triple line triangle design. The lip-rim juncture is again marked by parallel diagonal lines.

- d. Five St. Helena rim sherds: 1) A collared rim with sets of opposed parallel diagonal lines on the collar face. The lip on this sherd is rounded. 2) A collared rim with a squared lip and no decoration. 3) This rim resembles the Lower Loup Phase Nance Flared. It has an outwardly curving panel with no decoration. There are parallel

diagonal lines on the lip-rim juncture. The paste is dark gray in color, and the temper is a medium fine grit with inclusions of a white material, possibly chalk, limestone, or bone. 4) This rim is an angular S-rim. The collar face is decorated with cross-hatched lines, with a single horizontal line demarking the lip-rim juncture. The collar base has large indentations resembling punctates. The color ranges from gray to tan with firing clouds. The temper is a medium grit. 5) A direct rim with an undecorated face and parallel diagonal lines (indentations?) on the lip. The temper is a medium fine grit, and the paste has a definite trend towards flaking.

- e. One culturally unidentified rim sherd. The rim form resembles Great Oasis Wedge Lip, but it has fingernail punctates along the lip-rim juncture. The temper is a medium fine grit and the color is black. The overall quality of the workmanship is very high. This, along with its form, makes me tentatively identify this sherd as Great Oasis.

B. Four shoulder sherds:

- a. This sherd exhibits horizontal trailed lines on the upper portion, which is probably the lower portion of the rim panel. The lower portion of this sherd is marked by vertical cord-marked lines.
- b. This shoulder is smoothed on both the interior and exterior surfaces. The exterior is tan, while the interior is gray.

The temper is a fine grit.

c. This sherd is smoothed on the exterior only. The exterior is tan; the interior, orange. The temper is again a fine grit.

d. This shoulder is decorated with punctates filling in large areas. The color is tan, and the temper is a medium grit. This sherd, in its design, closely resembles, and may even be, Oneota.

C. One hundred sixty-two body sherds. Surface treatment ranges from heavily cord marked to smoothed over cord marked, to smoothed. Colors range from red to tan to black. The temper ranges from medium to fine grit, with occasional sand temper.

D. Two pieces of historic ceramics; one is a whiteware fragment, the other is a stoneware fragment. The stoneware fragment has a white glazed interior and exterior, with a design in blue on the exterior. The design includes a large O and part of a floral motif.

E. One piece of milk glass.

F. Two projectile points; one is a portion of a small point which exhibits a basal notch, the other point is a small side-notched point.

G. Four lithic tools. Two are bifaces made of Bijou Hills quartzite; one is a biface made of a basalt-like stone, and the final tool is a unifacially flaked implement made of a common red silicified sediment.

H. Six utilized flakes, one of which is Knife River chalcedony.

Two of the flakes are heat treated.

I. Thirty non-utilized flakes. Many of these are a red silicified

sediment (?) found on a number of sites in the Lewis and Clark Lake area. Since it is quite common and its quality is rather low, it is thought to be a local lithic material. At least five of the flakes from this site are heat-treated chert. Other cherts and quartzites are represented as well.

J. Five stone chunks. Three of these are a fine dark gray glassy stone; one is an extremely fine brown stone with wavy white bands. The final chunk is Sioux quartzite.

K. Five pieces of apparently non-cultural stone: two pieces of shale, two pieces of water-worn ferrous concretions, and one pink waterworn pebble.

L. One fragment of burnt bone.

M. Eighteen bone fragments: two of these are identified as bison longbones and one is a canid mandible fragment. The rest of the bones are unidentifiable due to their fragmentary nature.

Discussion

This site is obviously a rich deposit, representing at least four cultures. Primary among these are Great Oasis and St. Helena, with possibly Oneota and historic Euro-American (possibly part of the townsite of Tepeota), represented to lesser degrees. Shovel tests indicate an in situ deposit at a depth of 73 cm. below the present ground surface.

Datable materials, such as charcoal and heat-treated flakes, are indicated as being present at this site. This would make it

possible to use a multi-technique approach for firm dating of the various components.

A subsistence which was at least partially dependent on bison hunting is indicated by the few identified bison bones. This is further substantiated by the large quantity of bone observed at the site.

Site 25KX57 may prove to be important for establishing a local culture sequence. In addition, it could help illuminate several aspects of all four groups represented. In particular, this site is the westernmost site known for the St. Helena, and could help us understand this little known group.

Collection (6482C)

- A. One possibly Oneota (see above discussion) shoulder sherd with a punctate and radiating trailed line motif. The temper is a rather coarse grit, and the color is a very dark gray. This sherd is well vitrified.
- B. Seven body sherds. In all seven, the temper is a medium fine grit.
- C. One historic stoneware fragment with no identifiable marks or decorations.
- D. One iron wire ring, possibly a bracelet, crudely made from a piece of wire.
- E. One heat-treated flake of white chert.
- F. One distal end of a bison metacarpal.
- G. One hoof core. When an identification was attempted, it was

noted that this hoof core most closely resembles that of a bison, although it is much smaller in size. We, therefore, think that this may be from an immature bison calf.

H. Five unidentified bone fragments.

Discussion

This collection was included in the previous discussion.

Recommendations

This is one of the largest and most important sites in the project area. It will also be one of the most difficult to survey and assess. A large part of the site is under the lake, but close enough to the surface to be actively eroding. Any survey of that area of the site will require coordination between the cultural resource managers in the Omaha District office and the Lewis and Clark Lake Project Engineer.

The subsurface deposit on shore is more amenable to testing. A two-part attack appears appropriate. Coring on a ten-meter or larger grid pattern should determine the site limits and the nature of any stratification. The results of the coring could then be used to determine appropriate locations for two-by-two meter test pits, the purpose of which would be to determine the nature of the subsurface deposits. These onshore tests should be kept to a minimum, as they are not threatened. The offshore deposits should be the focus of an intensive effort whenever the water level is lowered significantly. In the meantime, an underwater survey could



FIGURE 9. East bank of Weigand Creek at 25KX57, looking north.



FIGURE 10. Same view of 25KX57, east bank, showing more of the area to the east of the shore.



FIGURE 11. West Bank of Weigand Creek at 25KX57, taken from the east bank.

be taken without special equipment by triangulation of items found on the lake bottom by crew members wading in the shallow waters, which now cover the terrace.

25KX58 (6482B)

Description

Site 25KX58 is located in a plowed field which is on a flat terrace bordered on the east by Weigand Creek and on the north by Lewis and Clark Lake. This site is also located approximately 100 meters south of 25KX200. The site is 50 by 75 meters in dimension and produced materials resembling Central Plains Tradition.

Collection

- A. One rim sherd with a wide squared lip. It is tempered with a medium coarse grit or sand. No design elements were observed, but cord roughening is present. This sherd can be assigned to the Woodland period, although no definite cultural affiliation can be made.
- B. Six body sherds with a medium grit temper.
- C. One historic brick fragment. This fragment is small and does not exhibit any maker's mark.
- D. One piece of transparent purple bottle glass.
- E. Two bifaces--one made of white-gray chert and the other of Bijou Hills quartzite.
- F. One piece of scoria, which has been used as an abrading tool.
- G. Three flakes of various local cherts.
- H. One chunk of white chert.

I. One unidentified bone fragment.

Discussion

Obviously, there are two components present at this site-- a prehistoric Woodland component and a historic component. There is not much direct evidence for the presence of datable material such as charcoal and heat-treated flakes, making absolute dating somewhat problematical. However, there is evidence in the several pieces of prehistoric ceramics that the site was occupied for some length of time, during which fire was most surely used.

This site is part of the Weigand Creek complex, and may prove to be important in understanding the Woodland-Great Oasis transition.

The historic component at 25KX58 may be associated with the historic townsite of Tepeota. Since it seems that much of this townsite is presently under water, 25KX58 may prove to be important in understanding Tepeota, since it apparently is an in situ deposit.

Recommendations

Plowing of the site should be discontinued. If this is not possible, the site should be subjected to a controlled surface survey and a few test pits excavated in areas which have concentrated cultural material.

25KX59 (6782C)

Description

The materials from this site seem to have been water deposited, perhaps from 25KX200. Most of the materials are found on the beach about 500 meters east of the Bloomfield Recreation area. The remainder of the materials were found along the beach between the Burbach and Bloomfield Recreation areas, in what was obviously a secondary deposit.

Collection

- A. One Great Oasis rim sherd. Parallel diagonal lines mark the lip-rim juncture. These are followed by three parallel horizontal lines, which are followed in turn by long narrow pendant triangles filled with parallel diagonal lines. The lip is flattened and set at a 45° angle to the rim. This may indicate that the rim was set at a like angle to the shoulder. The temper of this rim is medium fine grit or sand, and the color is tan.
- B. One possible rim sherd with what appears to be a double line pendant triangle motif. This sherd is terribly water worn, and most of the exterior surfaces are missing. The temper is medium fine grit, and the color is tan on the exterior and orange on the interior.
- C. One cord-marked body sherd. The temper is medium coarse grit, and the color is tan on the exterior and black on the interior. This sherd also exhibits some water wear.
- D. One historic whiteware fragment, from the base of a bowl or plate.

- E. One possible projectile point, bifacially flaked, made of Knife River chalcedony.
- F. One biface made of a pinkish heat-treated chert.
- G. One unifacially flaked knife, made of a very low quality stone.
- H. One core of black chert.
- I. Two bison teeth.
- J. One bone fragment, possibly fossilized.

Discussion

Great Oasis materials were recovered from the beach, but all the prehistoric ceramics are water worn. This raises the possibility that this material was washed ashore from 25KX200, which is nearby. It should be noted that any materials recovered from the beach in this area are in secondary deposits.

The one piece of historic ceramics, which does not exhibit any water wear, indicates the possibility of a nearby historic site.

Recommendations

No testing is recommended for this apparently redeposited material.

25KX61 (6982A)

Description

This site is located in a road cut on a high terrace in the Lindy Recreation Area. The site consists of lithics found

found eroding out of a road cut, which is about 100 m. south of Lewis and Clark Lake. No ceramics or diagnostic materials were recovered from this site.

Collection

- A. One unifacially flaked scraper made on a flake of Knife River chalcedony.
- B. One biface made of heat-treated chert.
- C. One utilized flake, used for a scraping activity.
- D. Three non-utilized flakes.

Discussion

All of the recovered materials are consistent with a single component. No datable or diagnostic materials were recovered.

Recommendations

This site does not appear to warrant testing.

25KX62 (62382B)

Description

This site is located on the beach between Lindy Recreation area and the Santee Reservation. It consists of a scatter of historic material along the beach that probably has fallen from the bluff top into the lake and then washed onto the beach.

Collection

- A. Two plate fragments, whiteware, with a blue floral design along the edge. The floral design is outlined in gold. One of the plates has a seal on the underside which reads "Semi-Porcelain," and also "Peach Royal." Semi-porcelain is a term applied to a high-fired whiteware which dates to the period after 1890 (Gates and Ormerod 1982: 8). It is more commonly (but incorrectly) called "semi-vitreous." Peach Royal is obviously a pattern name. Pattern names of this fetching ilk became popular in the 1930's (cf. Gates and Ormerod 1982: 176 ff).
- B. One whiteware dish fragment with a blue floral pattern similar to the ones just described, but differing in the lack of gold edging.
- C. One whiteware plate fragment with a multi-color floral design on the bottom of the plate rather than on the edge as in the previous three plates.
- D. One whiteware plate fragment with a ridged design and a double gold line along the rim.
- E. One whiteware plate fragment with a single gold line along the rim.
- F. One base fragment of a whiteware plate. No decoration or maker's marks are visible.
- G. One stoneware bowl fragment. This represents approximately half of a stoneware bowl with a collared rim. The bowl has a glazed interior and the exterior has a brown glaze.
- H. One brown glazed stoneware vessel base.
- I. One blue glazed stoneware bowl fragment. Once again, a substantial portion of the vessel is represented. Unlike the brown bowl, this bowl has a direct unmodified rim.
- J. One stoneware vessel fragment with a mottled brown-tan glaze on

both the interior and exterior.

K. One stoneware (?) fragment with a crude appearance and a coarse temper. This fragment is glazed brown.

L. One complete bottle reconstructed from five fragments. This bottle is made of a transparent turquoise glass. It stands 14 cm. tall, and has a narrow constricted neck. The rim has an extruded lip, such as was used with a cork or other form of stopper.

M. One clear glass fragment. This fragment comes from a square bottle, and has near the base, the words "Half Pint".

N. One clear glass stemmed bowl base.

O. Two turquoise-colored bases of large glass bowls. No maker's marks were seen.

P. One turquoise-colored bottle fragment, most likely from one of the two bottles represented above.

Q. One clear brown bottle base. This base is from a large bottle or jug.

R. One clear brown glass fragment, most likely from the bottle represented above.

S. One clear glass fragment with a design consisting of three ridges encircling whatever vessel this came from.

T. One large clear glass bottle base.

U. One large iron spike, or possibly, a chisel.

V. Two nails, one round and one square.

W. One large eye bolt, 12 cm. long.

X. One table knife, highly corroded.

Y. One large piece of geared rotary machinery, use unknown.

Z. One open metal cylinder, use unknown.

Discussion

This site was obviously occupied in historic times. Although no materials which would allow a precise date were recovered, a late 19th to a mid 20th century date is suggested by the collection. The site represents a rather substantial midden, probably associated with a farmstead.

Recommendations

This historic material was found on the beach in a secondary context. It could derive from either the bluff top or from under the lake, with the latter the more likely source. In either case, no testing is necessary in this site.

25KX63 (DRAINAGE #20)

Description

This site consists of a charcoal lens 1 m. long and 5 cm. thick located in the west bank of a drainage. Within the charcoal lens, bone was found. The lens is located approximately 80 cm. below ground surface.

Collection

- A. Two bison rib fragments.
- B. One sack of burned earth.

Discussion

The association of human activity with the faunal remains is

quite tenuous. However, the burned earth would lead us to believe that C-14 dating could establish a date for this possible occupation.

Recommendations

This site contains an apparent cultural feature with animal bones, charcoal, and burned earth. The profile should be cleaned and examined by a geomorphologist, and the feature, which is threatened by erosion, should be excavated.

25KX64 (DRAINAGE #18)

Description

Bone was found eroding out of the east bank of this drainage; no cultural material was located.

Collection

- A. One bison vertebra
- B. One piece of possibly water-worn sandstone.

Discussion

There is no indication that this material is cultural. The bone shows no evidence of butchering, and the sandstone shows no evidence of use. No fire is indicated. This fact, along with the lack of cultural material, makes dating nearly impossible.

Recommendations

No testing is recommended for this site.

25KX65 (DRAINAGE #17) (see figures 12 and 13)

Description

Site 25KX65 consists of an historic house foundation, possibly a Santee Reservation allotment house, and historic material associated with it. Some lithics were found on the west bank of the drainage near the house. The house is located on a small terrace formed between the two banks of the drainage. Some bone and glass was found eroding from the cut bank, which forms the west side of the terrace, at depths of 1 to 95 cm.

Collection

- A. One brick fragment.
- B. Two fragments of window glass.
- C. Large biface, 11 cm. long, 8 cm. wide, and 4 cm. thick, made of Bijou Hills quartzite. This chopper is typical of the bison-butcherer tools manufactured from this coarse material from prehistoric through historic times.
- D. One fragmented bison radius. This fragment exhibits a faint set of butcher marks near the remaining epiphyses.
- E. One large bone fragment, probably from a medium to large-sized animal, such as an elk or bison.
- F. Twenty-four unidentified bone fragments.

Discussion

A check of courthouse records indicated that this site is a



FIGURE 12. Remains of a possible allotment house foundation in the cut bank at 25KX65. Crew member points to the north.

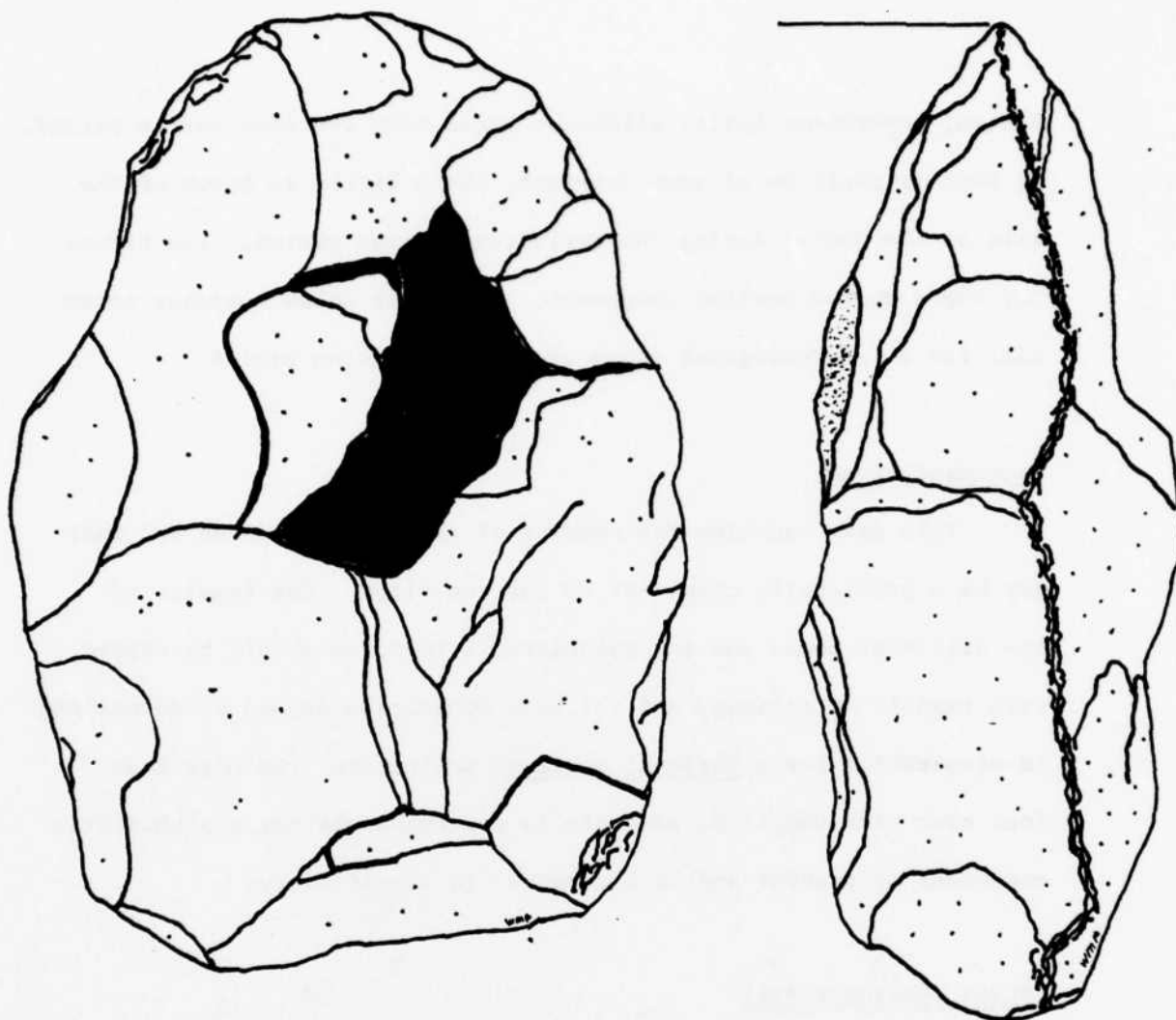


FIGURE 13

25KX65: BIFACE OF BIJOU HILLS QUARTZITE (ACTUAL SIZE)

INDICATIVE EITHER OF A PREHISTORIC COMPONENT
AT THIS SITE OR PERSISTENCE OF THIS TOOL TYPE
INTO THE RESERVATION PERIOD

Santee, government built, allotment house from the reservation period. As such it could be of some interest, since little is known of the life of the Santee during the early reservation period. The biface may represent an earlier component. This site holds enormous potential for an archeological study of the reservation period.

Recommendations

This site contains the remains of an allotment house and what may be a prehistoric component on the toe slope. The remains of the allotment house and any associated structures should be mapped with transit or alidade, and the site boundaries should be determined in preparation for a National Register nomination. No more than four test pits should be adequate to determine whether a prehistoric component is present and to determine its significance.

25KX67 (DRAINAGE #14)

Description

This site was first located on a terrace slope in this drainage. Woodland ceramics were found in this location, as well as two nearby erosional gullies. Lithics and bone were also recovered.

Collection

A. One Woodland rim sherd, resembling those of the Valley Phase. This rim has faint, diagonal lines on the lip-rim junction along with punch and boss decorations just below that. The paste is

rather flaky and coarse, and the temper is a medium coarse grit.

B. Four thick (approximately 7 mm.) body sherds with medium grit temper.

C. Seven thinner (approximately 5 mm.) body sherds with medium grit temper.

D. Two flakes of local chert, with no evidence of heat treatment.

E. One fragment of unidentified long bone with butcher marks.

F. One bison radius and ulna fragment with butcher marks.

G. One bone fragment which appears to be modified and utilized, perhaps as a scraper.

H. Four bison teeth.

I. Thirty-one unidentifiable bone fragments.

Discussion

This site could possibly contain two components, based on the two thicknesses of body sherds. At least one of these components is a Middle Woodland Valley Phase occupation. No other datable materials were observed or collected.

Bison remains are definitely associated with human activity by the butcher marks. This implies that bison hunting was part of the subsistence of these people.

Recommendations

This site is on a terrace remnant which helps to indicate its maximum possible extent. It should be mapped with transit or alidade,

and 3 to 4 deep test pits excavated. A geomorphologist should examine these.

25KX68 (DRAINAGE #10)

Description

This site consists of surface finds of bone, lithics, and historic materials on the east slope of the drainage. No indication of the depth of the site was found. It was thought that this material may have been eroding from the bluff top.

Collection

- A. Thirty-eight whiteware plate and bowl fragments. One of these fragments has a raised grapevine motif along the inner edge of the lip. Three fragments have the remains of maker's seals on the underside of the base. One of these has the word "Ironstone" and a unicorn on a coat of arms. This could represent a mark of either Knowles, Taylor & Knowles, 1872-1878, or John Wyllie and Son, 1875-1885 (Gates and Ormerod 1982: 116, 319). The other seal is obviously different, but is too incomplete to make out any words or designs.
- B. One fragment of clear window glass.
- C. One fragment of clear brown bottle glass.
- D. One curved fragment of glass, possibly a bottle neck.
- E. One biface made of Bijou Hills quartzite.
- F. Two non-utilized and non-heat-treated flakes of chert.
- G. One chunk of chert with a few flakes taken off. Much of the cortex remains on the unflaked portions.

- H. Two square nails.
- I. Two iron artifact fragments with ridges on one surface.
- J. One bison rib.
- K. Two bison vertebrae.
- L. One bison tooth.
- M. One deer rib.
- N. Both halves of a deer mandible, aged by molar eruption to about 19-20 months.
- O. One deer scapula.
- P. Three burnt bone fragments.
- Q. Twenty-one unidentifiable bone fragments.
- R. One bison phalanx.
- S. One bison calcaneus.

Discussion

It is unclear whether this site is composed of one or two components. This problem cannot be resolved without some indication of the stratigraphic context in which the artifacts were found. It could be that this is again a Santee allotment house, or it could be an historic farmstead and a prehistoric component.

The historic component is roughly datable by the seals on the whiteware to some time after A.D. 1872 but probably not much after 1900. If the burnt bone fragments are from the prehistoric component, then it should be possible to find charcoal for C-14 dating. If not, then the prehistoric component could possibly be dated by C-14 dating of the bone.

The historic component seems to be fairly rich, with evidence for several ceramic and glass dishes and bottles. The square nails suggest the presence of structures.

The site described here could be of interest in studying the lifeways of either the farmers of the late 19th century, or those Santee of the early reservation period, depending on which of the possibilities this site actually represents.

Recommendations

The most productive spots in the gully walls should be cleaned and profiled so that they can be examined by a geomorphologist. Excavation should be limited to sampling dating cultural and paleo-environmental samples taken from the profile walls.

25KX69 (DRAINAGE #11)

Description

Bone was found eroding from the bank on the east side of this drainage and facing Lewis and Clark Lake. Several levels were found, all around 1 meter below ground surface.

Collection

- A. One scapula of a small bison, possibly used as a hoe. The spinal process of the scapula has been partially removed, as has been the posterior edge of the blade.
- B. One rib fragment with what appears to be a drilled hole in what would have been the middle of the rib. This hole shows some apparent

wear. This artifact could possibly be the remains of a shaft straightener.

- C. Four bison rib fragments.
- D. One bison phalanx.
- E. One unidentified vertebral process.
- F. Two bison teeth.
- G. One unidentified bone fragment.

Discussion

The association of this collection and cultural activity is rather tenuous, but the hole in the rib fragment is compelling.

There is no indication that fire was used on this site. This makes the possibility of finding charcoal for dating very slim. The bone could, however, be dated using C-14 methods.

Recommendations

The face of the cut bank should be cleaned and profiled, and the extent of the site should be determined by a combination of test squares and coring. A geomorphologist should analyze the profile.

25KX70 (TT)

Description

Site 25KX is located on a grassy knoll bounded by a straight row of elm trees. Shovel tests dug into this knoll along the row of trees revealed bone, burnt bone, charcoal, and cinders in a dense bed of ash at a depth of 15 to 20 cm. This deposit extended for at least 24 m.

along the row of trees. The site contained cinders from burning coal, and so was called an historic site. It was noted on a series of maps, which date to 1949, that a farmstead occupied this area at that time. This deposit is probably associated with this recent farmstead.

Collection

- A. Two small pieces of charcoal.
- B. Five cinders.
- C. One bison, or cow, phalanx.
- D. One burnt bone fragment.

Discussion

This site is on an old farmstead, and in fact, is found to have a distribution which parallels a planted row of trees. It may possibly be a trash dump for the farm. This would have been used for the disposal of the cinders from a coal burning furnace, along with other material. Courthouse records show that this property was acquired by Warren Foner on May 12, 1920. Thus the site dates to 1920-1949.

Recommendations

The historic data, fill of the midden, and row of trees all indicate that this is an historic 20th century farmstead. Since the trees and knoll can be used to demarcate the site, testing to determine site boundaries is not necessary. Since it is unlikely

that a 20th century farmstead is going to be determined eligible for the National Register, testing to determine site content would also be superfluous.

25KX71 (XX) (see figures 14,15,16,17,18,19,20 and 21)

Description

This site was discovered by noticing the remains of a barn, or some similar building, and a corral. The historic component of this site is located mostly at the base of the bluffs. As we were photographing the site, we noticed a large quantity of prehistoric lithic material eroding from a cattle trail which ascended the bluffs immediately to the south of the corral, and just below the cistern. The area around the bluffs was highly dissected. For this reason, we went around the area looking for any further cultural material which may have been eroding out of these bluffs. Instead, we found a human bundle burial to the northwest of where the prehistoric component had originally been found. This burial was eroding from the cut bank at a depth of 75 cm. below the present ground surface. Much of the remains had eroded away, leaving the ribs, scapulae, and spinal column.

The original deposit of lithics found at this site came from a depth of about one meter below the present ground surface.

Collection

A. Two small, poorly made, projectile points. The first point is

- 2.6 cm. long with a stemmed base, and is made of a white chert.
- The second point is 2.7 cm. long, has a converging stem, and flared barbs at the shoulder. This point is made of a red silicified stone.
- B. A stone tool with both bifacial and unifacial working edges. This tool is made of a heat-treated brown chert.
- C. Fifty-seven flakes. Many of these are made of a low quality white chert, which often appears to be heat treated. Other flakes are of Bijou Hills quartzite, Knife River chalcedony, and a few varieties of local cherts.
- D. Seven chunks, or spalls, of white chert.
- E. One longitudinally split bison metacarpal.
- F. One bison phalanx which may articulate with the metacarpal.
- G. One bison tooth fragment.
- H. Nine unidentified bone fragments.
- I. Four whiteware fragments.
- J. One human bundle burial, including portions of the skull, ribs, scapula, vertebral column, and sacrum. Bits of cedar bark were recovered from this burial, possibly indicating that the individual was buried in a cedar bark bag.
- K. Two unmodified stones, found in association with the burial.

Discussion

The artifacts indicate an occupation of this site by possibly Woodland peoples. No ceramics were recovered, making cultural affiliation difficult to assign.

Tool making, or some sort of lithic reduction, quite obviously

took place on this site, judging by the concentrations of lithic debitage. Many of the flakes and chunks retain some cortex, supporting this supposition.

Fire may have been used at this site, based on the heat-treated chert. This would make it possible to recover charcoal for radiocarbon dating, as well as heat-treated flakes for thermoluminescence.

Bison hunting, as a part of the subsistence pattern, is indicated by the bison metacarpal and phalanges, as well as a bison scapula observed in the cut bank. Legs and scapulae represent major meat-bearing portions of the bison, and would have been brought back to the camp after a kill.

The human burial may be associated with this Woodland association, since it was found at the same level below the ground surface as the cultural material. Analysis of the skeletal material is being done elsewhere, and will not be mentioned here.

Site 25KX71 was originally found by the discovery of its historic component. This is composed of a pole building, cattle pens, a windmill, cistern, and a wagon. The collection also contains the whiteware sherds which are associated with this component.

This site may prove to be important in understanding the Plains Woodland period. The collection indicates a major occupation, as well as burials.

Recommendations

The prehistoric component at this site is threatened by severe



FIGURE 14. Prehistoric component of 25KX71, in cut bank.
View to the northeast.



FIGURE 15. Remains of pole building in the historic component
of 25KX71. View to the northeast.



FIGURE 16. Cistern and collapsed windmill in the historic component of 25KX71. View to the east.



FIGURE 17. Remains of a wagon in the historic component of 25KX71. View to the north.



FIGURE 18. Drs. O'Shea and Blakeslee excavating the burial at 25KX71.



FIGURE 19. Partially excavated burial at 25KX71. Trowel is for scale.



FIGURE 20. View of burial at 25KX71.



FIGURE 21. View of burial at 25KX71.

erosion, and the materials encountered during the initial survey suggest that the parts which remain may contain significant deposits. The majority of the cultural materials came from the road and an adjacent ravine. The faces of the ravine and the slope next to the old road should be profiled in order to determine the location and extent of the cultural deposit(s). These should be sampled with a few test pits in order to obtain data regarding the content of the site. The slope which yielded the burial should be re-examined to determine whether any others are present.

25KX200 (6782A) (see figures 22,23,24 and 25)

Description

Site 25KX200 is located on a point of land which extends out into Lewis and Clark Lake about 120 m. west of the mouth of Weigand Creek. This site consists of an intense scatter of Woodland, Great Oasis, St. Helena, and historic materials. The boundaries of the site were difficult to ascertain due to a thick growth of cattails and rushes, and to swampy conditions. Material seems to be, at least in part, washing in from somewhere out in Lewis and Clark Lake. However, shovel tests indicate that the two sites were contemporaneous. No cultural material was noted between the two sites, but this may be explained by the depth of the in situ deposits, as well as by the swampy and overgrown conditions.

This site produces historic materials, and is located in the

approximate location of the townsite of Tepeota. It probably represents part of this townsite.

Collection

A. Twenty-seven rim sherds.

- a. Two Great Oasis High Rim: 1) This rim has parallel horizontal lines overlain with a large crosshatched pattern. There are parallel diagonal lines marking the lip-rim juncture. The temper is a medium fine grit, and the color is gray. 2) This rim also has the parallel horizontal lines on the panel, but this time the overlying motif is a double lined pendant triangle. Once again, this rim has parallel diagonal lines marking the lip-rim juncture. The temper is a medium fine grit, and the color is light orange.
- b. Five St. Helena collared rims: 1) This rim has large crosshatching on the collar face. The temper is a fairly coarse grit, and the color is orange on the exterior and gray on the interior. 2) This second collared rim has parallel horizontal lines on the collar face. The temper is a medium fine grit. 3) The third collared rim has parallel horizontal lines overlaid by opposed parallel diagonal lines on the collar face. The collar base is marked by punctates. The temper is a medium fine grit, and the color is a dark gray. 4) This rim has no

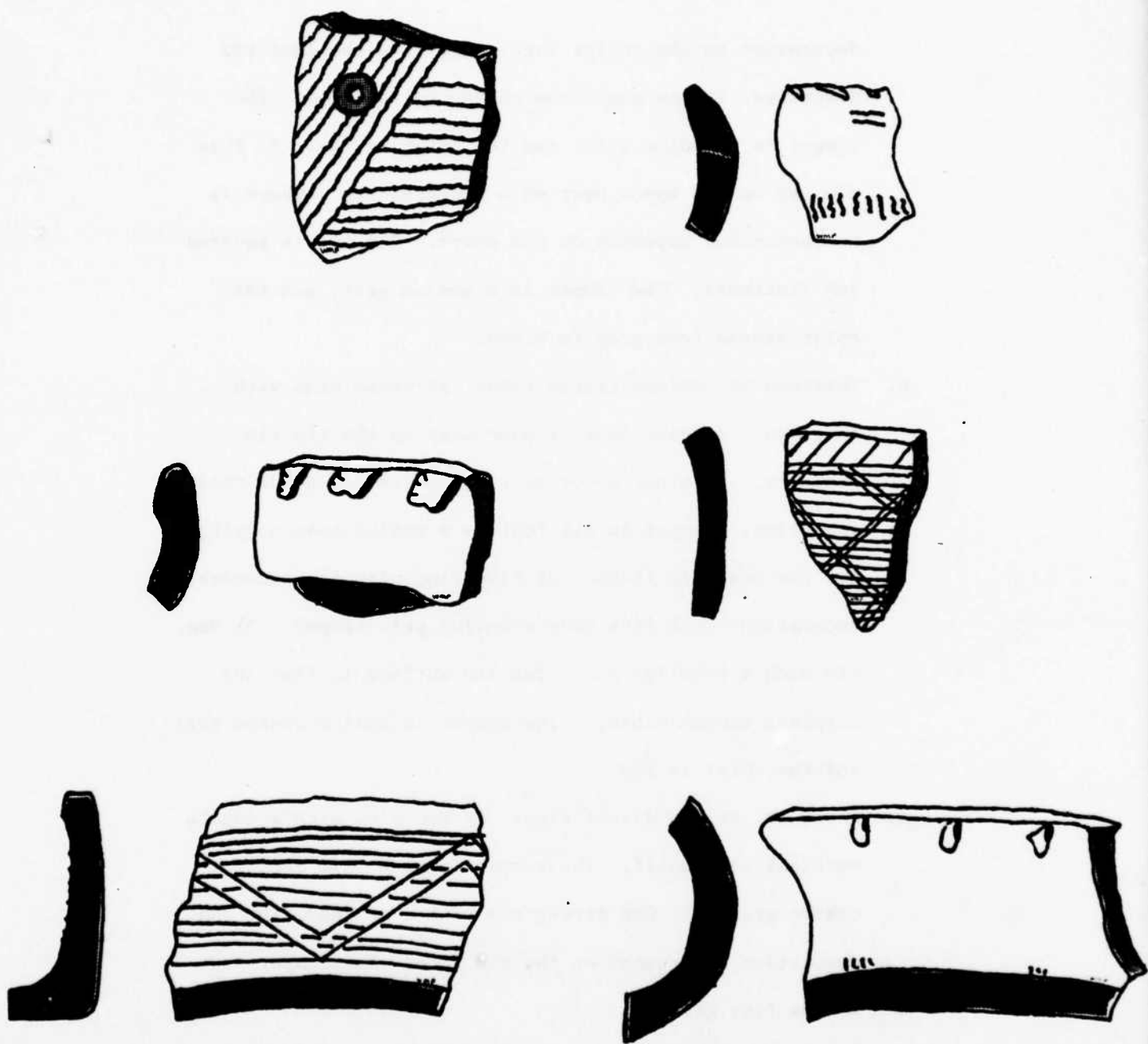


FIGURE 22. 25KX200: POTTERY (ACTUAL SIZE)

decoration on the collar face, but, like the last rim described, it has punctates on the collar base. The temper is a medium grit, and the color is tan. 5) This rim may be the upper part of a collared rim. There is no decoration anywhere on the sherd. The lip is squared and flattened. The temper is a medium grit, and the color ranges from gray to brown.

- c. Thirteen St. Helena flared rims: 1) Seven rims with fingernail indentations or punctates on the lip-rim juncture. No other decoration was noted on any of these four rims. Temper in all four is a medium coarse grit, and the paste is flaky. 2) Five rims with no discernable decoration. All five have a medium grit temper. 3) One rim with a bevelled lip. The lip surface is flat and displays crosshatching. The temper is medium coarse grit, and the color is red.
- d. Three St. Helena direct rims: 1) Two rims with a double vertical line motif. The temper in both is a medium coarse grit. 2) One direct rim with a rounded lip. No decoration is present on the rim face. The temper is a medium fine grit.
- e. Two Woodland (?) rims: 1) This rim has a slight flare. It has punctates on the lip, and exhibits cord marking towards the shoulder. The temper is a coarse grit. 2) This rim is very short (less than 1 cm.) with a rounded lip. No decoration is present on this sherd. The temper

is a coarse grit, and the color is tan.

- f. Two rims with undiscernable form or cultural affiliation due to their highly fragmentary nature: 1) This rim has a rounded lip and a decoration made up of parallel lines. The temper is a medium grit, and the color is tan. 2)

This rim has a medium grit temper.

B. Two shoulder sherds, each with a hole formed before firing. These are reminiscent of the rimless "Seed Jars", and, as such, could be associated with the Great Oasis component. Both sherds are tempered with a medium fine grit and are well fired. One sherd shows some cord roughening.

C. One handle fragment. This handle may be a tab, or some other similar artifact. The temper is a medium fine grit, and the color is gray.

D. Four hundred fifteen body sherds. Colors range from red to tan to black. Surface treatment is mostly cord roughened and smoothed over cord roughened, but other types of surface treatment, such as smoothed and polished, occur as well. At least one sherd appears to be check-stamped. Thickness is bimodal; one group clusters around 7.5 mm. and the other clusters around 4 mm. Temper ranges from medium coarse to fine, with the thicker sherds showing a tendency towards heavier and coarser temper.

E. One piece of fired clay with grass and twig impressions. This appears to be a piece of daub.

F. Two historic ceramic fragments. One is a fragment of brown

glazed stoneware. The second sherd is a piece of whiteware with writing which appears to be "MADE IN ENGLAND," although all that is left is "MAD. ENG". The phrase first appears on English pottery about the turn of the century.

G. One glass bottle rim fragment with an extruded lip.

H. One blue glass seed bead.

I. Eight Projectile points: 1) This point is the base of a small arrow point. Basal and side notches are present. 2) This point resembles the last point except that it does not have a basal notch. It is approximately 1.75 cm. long, and is a narrow triangular arrow point. 3) This point is missing the basal portion, including any notches that may have been present. It is approximately 1.75 cm. long and is triangular in shape. 4) Two small triangular unnotched points made of heat-treated chert. 5) One unfinished triangular point, about 2.5 cm. long. This point is side notched. 6) One large (3 cm. long) point made of Bijou Hills quartzite. This point appears to be stemmed, but may be corner notched. 7) One projectile point blank. Since this point is unfinished, not much can be determined from it.

J. Nine scrapers. Eight of these are end scrapers (two of which are thumbnail scrapers), and one is a side scraper. All of them are made of locally available chert.

K. Three bifaces. Two of these are made of heat-treated chert.

L. One unifacially flaked tool.

M. Four groundstone tool fragments. One of these appears to be part

of a metate, while another appears to be part of a mano. The others are not identifiable as any specific tool type.

N. Two pipestone fragments. One is a chunk with no apparent use or wear caused by human action, while the second piece has been cut and smoothed.

O. Fifty-nine utilized flakes. At least two of these are Knife River chalcedony.

P. Three chunks of red ochre.

Q. Four hundred eighty-five flakes. Several of these flakes are Knife River chalcedony. The majority of the chert flakes have been heat treated. Both soft hammer percussion and pressure flakes are represented in this collection.

R. Sixteen chunks or cores of chert. At least one of these has been heat treated.

S. Three pieces of apparently non-utilized scoria.

T. Two bone tools. One is a toothless flesher made of an elk metatarsal; the other is a diagonally cut piece of longbone, the use of which is unknown.

U. Eight identified bones and bone fragments: 1) One muskrat femur.

2) One deer metacarpal. 3) One deer vertebra. 4) One deer ulna. 5) One deer astragalus. 6) One bison metacarpal.

7) One bison humerus. 8) One species unspecified fish bone.

V. Two identified teeth: 1) One bison tooth. 2) One deer fragment.

W. One unidentified herbivore tooth fragment.

X. Forty-three unidentifiable bone fragments.

Y. Two burnt bone fragments.

Z. One unidentified metal fragment.

Discussion

This site represents a rich, intensive, and recurring occupation. At least four components are present. These are St. Helena (which produces a majority of the material), Great Oasis, Woodland, and Historic. The Historic may be broken down into Euro-American (possibly the site of Tepeota, a stage stop on the Niobrara road circa 1858-1870) and Native American, based on the one blue seed bead. There are several references to a Native American village in this vicinity, either Ponca or Yankton.

The presence of large quantities of heat-treated chert, along with the burnt bone indicates the presence of fire. This would allow several methods of dating the various components of this site.

The burnt bone also associates human activity with the faunal remains. A subsistence partially dependent on hunting and fishing is indicated. Animals that were hunted were bison, elk, deer, and muskrat. The fish bone indicates fishing as a possible food source. Plant foods were also part of the subsistence, based on the mano and metate. A human skull which eroded from the site is in the River Basin Surveys collections.

Some of the activities represented by this collection are the manufacture and maintenance of stone tools, manufacture of ceramics, cooking, and hide processing. These, along with the one piece of daub and the richness of the site, indicate that this was a village.

The presence of Knife River chalcedony and pipestone argue for connections with an established trade network.

Shovel tests indicate an in situ deposit at approximately 70 cm.

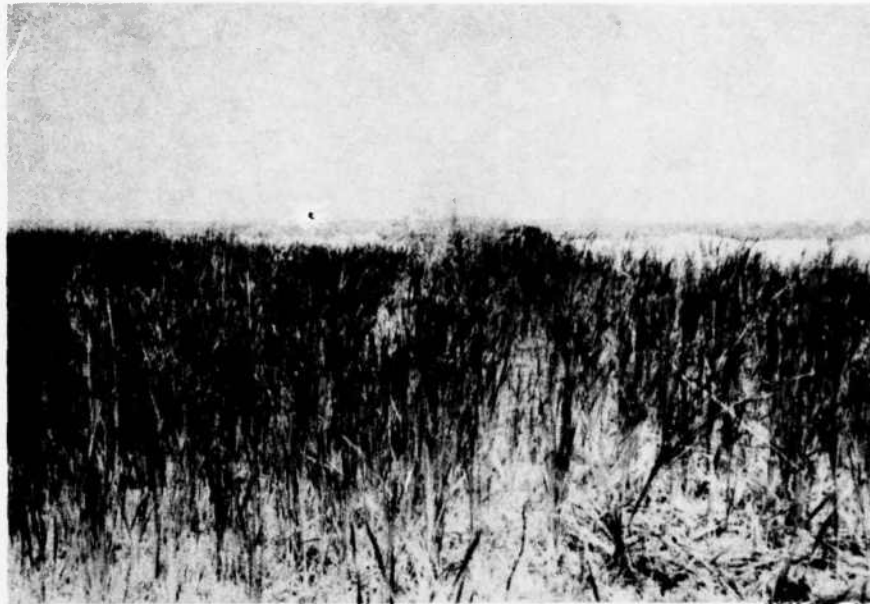


FIGURE 23. View to the northwest of 25KX200.



FIGURE 24. Shoreline at 25KX200.



FIGURE 25. View to the west, of the richest deposit at 25KX200.

below the present ground surface. This lends strength to the idea that much of the site is presently in Lewis and Clark Lake and eroding there. Much of this collection washed ashore from the portion of the site located in the lake.

This site would obviously be important for understanding the local cultural sequence. In addition, it could help us to understand the transition from Woodland to Great Oasis. The St. Helena deposit appears to be quite rich at this site, and this could help broaden our knowledge of this group.

Recommendations

The recommendations for this site are the same as for 25KX57. A few cores should be obtained from the area between the two sites to determine whether the distribution of the cultural material is continuous.

25KX201

This site was located on the left (west) bank of Miller Creek. It was originally reported as an exposure of cultural materials in a dark zone buried beneath a lighter-colored deposit. The Nebraska Site Survey Form, filled out by Gant in 1963, mentions Woodland body sherds, a large side-notched point, ovoid bifaces, scrapers, and large amounts of animal bone. He also recorded a possible "bone-filled" fire pit (?) and two storage (?) pits. It is not clear whether Gant observed these features himself or whether they had

been reported to him by an informant, because the testing of the site reported in Howard and Gant (1966: 15) was entirely negative.

The site is near 25KX15, but on the opposite side of Miller Creek and upstream from it. Indeed, Gant noted the similarity between the contexts of the two sites, but because he had the erroneous impression that 25KX15 was an Archaic site (see inventory report for 25KX15), he suggested that perhaps one or both sites might be multicomponent. Given that 25KX15 is a Woodland site with an assemblage similar to that from 25KX201, the two sites may represent a single occupation or successful hunt at the mouth of Miller Creek. The report of the "bone-filled fire pit" at 25KX201 and the presence of bone smashed to boil for bone grease at 25KX15 suggest that the same sort of activity occurred at both sites.

Gant and Howard's test excavations at this site in 1964 were entirely negative; no cultural materials were found, apparently because the site had been destroyed during the construction of a picnic area. Our survey found absolutely no trace of the site. Therefore, it no longer represents a management concern.

25KX202

This site was initially reported by Howard and Gant (1966: 15). Unfortunately, it had been potted before they found it, and they found only a few scraps of human bone in the pothunters' backdirt. A small ossuary seems to be indicated, as the remains of at least three individuals were recovered in the backdirt of a 10-foot square. Three nearby pits were apparently devoid of human remains.

Similar ossuaries have been reported by amateurs in Dixon County, and these were situated similarly to this one--on the side of a high hill overlooking the Missouri River. No diagnostic cultural materials were found in the backdirt.

Our survey failed to relocate this site, which is not surprising, given that it appeared to be completely excavated in 1963.

25KX203 (AAA)

Description

This site consists of a scatter of lithic artifacts and bone along the shoreline and a stratified deposit in the cut bank at the Deepwater Recreation area. Bone was noted in the cut bank at three different levels: one meter below ground surface; 1.5 meters below ground surface; and 2.5 meters below ground surface. Lithics were also found in these levels. A heavy concentration of charcoal and burnt bone was noted on the top of the talus slope. The deposit extends for 60 meters from the access road west along the shoreline. The possible remains of a house were noted in the form of a charred post found in the talus slope. This site is actively eroding; several cubic meters of soil had slumped from the face of the bank between two visits to the site.

Collection

A. One 3-centimeter long side-notched projectile point with the tip, approximately the last centimeter, missing.

- B. One chipped stone drill bit, 2 centimeters long, with the basal portion missing.
- C. Fourteen flakes of Bijou Hills quartzite.
- D. Six flakes of red silicified stone.
- E. Two unidentified chert flakes.
- F. One end scraper.
- G. One bifacially flaked tool made of heat-treated chert.
- H. One chunk of fire-cracked rock.
- I. Seven fragments of burnt bone.
- J. One complete bison tibia.
- K. Twelve bone fragments representing both deer and bison.
- L. Three mussel shell fragments.
- M. Two historic stoneware fragments, one white on both sides, the other brown and glazed on one side and white on the other.
- N. One iron file with a pointed tang.

Discussion

A very interesting site. It is deeply stratified with several components, the earliest of which is possibly Late Archaic or Early Woodland, and the latest of which is Historic. Great Oasis materials were found on the east bank of the stream by Howard and Gant.

Fire is indicated by the seven burnt bone fragments (many more burnt bone fragments were observed at the site, but not collected) and by the heat-treated flakes. Fire is further indicated by a large quantity of charcoal found at the site, some of which may

represent the remains of a lodge post. The presence of fire and heat-treated flakes makes dating of some of the components possible by C-14 and thermoluminescence.

Although no prehistoric ceramics were observed in this portion of the site, it does appear to represent a rather substantial and repeated human occupation. This observation is based on the quantity of lithic material found at the site, only a fraction of which was collected. The presence of large quantities of fire-cracked rock, along with the possible lodge post, argues for a habitation site at some time. This site appears to have considerable potential for establishing a local cultural sequence.

This site was originally reported by Howard and Gant (1966: 15-16). They found cultural materials on the right (east) bank of the creek, whereas those reported here are from the west bank. They tested the site in 1963 and 1964, recovering Great Oasis pottery at a depth of 13 inches. This suggests that the material from the west bank, found at depths exceeding one meter, is probably older than Great Oasis since both banks are part of the same terrace. Howard and Gant's 1964 test yielded very little material, and we found none on the east bank.

Recommendations

This site appears to have the potential for National Register eligibility, based on clearly stratified deposits, preservation of bone and shell, and the presence of datable materials. Testing of

the site could consist of two types of work. It would be appropriate to clean the face of the cut bank in order to record the profile of the site and to facilitate sampling of the various strata. Since this portion of the site is eroding, the archeological work would be limited primarily to material which would soon be lost. It is unlikely that simply cleaning the face of the profile will yield all of the information needed for a determination of eligibility, although it should give information on site extent and depth. The remaining information could be obtained from a 2-meter wide test in the bank face, the placement of which would be determined from information obtained when the bank face is cleaned. Radiocarbon and thermoluminescent samples should be obtainable during excavation of this test, along with pollen and flotation samples. The depth of the site is such that the test area will have to be stepped down, but it should be possible to do this in 1-meter steps so that damage to the interior portion of the site is minimized. A geomorphologist should be present to assess the sedimentary record at the site.

25KX204 The Tramp Deep Site

This deeply stratified site is located on the west side of a narrow valley which enters Lewis and Clark Lake from the south. Howard and Gant (1966: 16-23) excavated the site in 1963 and 1964. They divided the site into three zones, one of which contained multiple strata with cultural materials.

Zone III lay at a depth of 4.5 to 5 feet below surface; Zone II between 5.5 and 16 feet; and Zone I between 16.5 and 18 feet. In all, there appeared to be eight separate strata which contained cultural material (the evidence for a cultural origin for some was equivocal). In spite of the large number of strata and the great depth of the sediments, only a short period of time appears to be involved. Zone I yielded charcoal dated at 2960 ± 125 B.P., while Zone III yielded a sample assayed at 2660 ± 110 B.P. (Howard and Gant 1966: 20). The latter cannot be correct, however, as this level yielded Feye cord-roughened pottery, which is of Late Late Woodland affiliation. It should date to A.D. 700 - 900 (1250-1050 B.P.). Even so, the evidence for rapid deposition is impressive.

This situation is probably explained in terms of the geomorphic situation. The site is situated on a very narrow slope at the base of a bluff. In 1964, when the site was excavated, the terrace was between 28 and 55 feet wide, with a grade of between 33% and 27%. This toe slope situation helps to explain the rapid deposition, which represents colluviation, not alluviation. In the approximate 1800-year period, there was a total accumulation of 12 feet.

All of the strata which yielded cultural materials contained animal bone, primarily bison; sometimes in large amounts. Butchering marks, inverted bison skulls, and sets of articulated bones indicate that bison were butchered on the spot in many, if not all, of the cultural horizons. The artifact assemblages, which include points of bone and antler, large bifaces of Bijou Hills quartzite, scrapers,

and knives are what one would expect to find at a kill and butchering site. In Zone I, the bone was smashed for marrow, and abundant ash and charcoal suggests that it was processed for bone grease. This zone is quite similar to those reported for 25KX15 and 25KX201.

The Tramp Deep site thus appears to represent a series of bison kill and butchering sites in a narrow valley which emptied into the Missouri River floodplain. Whether the bison were killed as they passed through the valley on their way to or from the floodplain, or whether they were driven into this natural trap and killed there, cannot be determined.

In the summer of 1982, an intensive effort was made to relocate this site. It could be reached only by walking along the talus slope at the lake shore from a marina west of the site. This area is actively eroding, as evidenced by numerous areas of recently fallen shale deposits. The site itself is located above a small swampy area created since the lake was flooded. Howard and Gant (1966: 16) mention that shoreline erosion created a small bay which had become filled with driftwood. This has trapped sediment to form the swampy area.

The site is located where several gullies coalesce. One of these seems to have developed because the original excavations were left open. The others are indicated on Howard and Gant's (1966: 17) site map. This erosion has destroyed part of what remained of the site. Careful examination of all of the gully walls yielded no cultural materials, but a piece of Bijou Hills quartzite and a

and a fragment of a waterworn bone were collected from the site surface. Since the bulk of the material in the 1963-1964 excavations came from the northern extremity of the site, which was being eroded by wave action, and since the gully which formed when the excavations were left open yielded no cultural materials, one must conclude that the site has been destroyed. No further fieldwork is recommended, but an in-depth restudy of the collection and field notes would be in order. The original report does not meet modern standards, as the artifact descriptions are lumped with those for materials from other sites. Such a restudy could be a student project at the University of South Dakota (the materials are at the South Dakota Museum), or a required part of the analysis of similar sites which might be involved in a testing program.

25KX209 The South Shore Site

This site was discovered in 1963 by Robert D. Gant, but through some oversight was not included in the report of that survey (Howard and Gant 1966). Gant's site survey form locates it in the South Shore Recreation area, just upstream from Gavin's Point Dam. He recovered some lithic material from in and near a road cut, but noted that much of the site had been destroyed. Our survey failed to relocate the site, in spite of a fairly specific map location. The only explanation we can offer for this is that the site had been destroyed by road building and landscaping, and that Gant had picked up the few remaining pieces.

He recovered two points, an end scraper, a few flakes, and some fire-cracked rock. One point is described as a medium-sized, side-notched specimen and the other as triangular with a concave base. Similar forms were found by Neuman and Witty (along with fire-cracked rock) at 25KX15, a Late Woodland site. The primary difference in context between that site and 25KX209 is that the former was deeply buried; 25KX209 occurred in a spot where only 4 feet of soil lay above a shale bedrock (at least this was the case after construction had occurred).

Given that the site has probably been destroyed and we were able to find no trace of it, it does not represent a management concern at the present time. No further work is recommended.

25KX210

This site was found in 1963 by Gant and Howard, at which time it was noted that lakeshore erosion had destroyed most of it. It is located on the south shore of the lake in the Bloomfield area. Gant recovered cord-roughened pottery, numerous flakes, two end scrapers, and a point fragment from the beach. Some animal bone and a piece of stone was noted in situ in a thin dark zone buried 4 feet below the surface. The pottery (Howard and Gant 1966: 27, Plate 32e) includes a rim sherd that is described in the text as like Valley cord-impressed but is labeled in an illustration as Scalp Punctate. It has diagonal cord marks on the exterior and a single row of punctates from the interior which have perforated the exterior surface.

It indicates a Woodland age for the site.

When our survey revisited this spot, a few small scraps of animal bone were observed on the beach, but these were waterworn and could not be demonstrated to be part of the site. No cultural material was observed in the cut bank which now lies close to a road. Erosion, perhaps aided by construction, appears to have destroyed the site. No further work on it is required.

SOUTH DAKOTA SITES

39B036 (CC)

Description

This site is located on the flat uplands that run from the Hutterite Colony to Charley Creek. Site 39B036 consists of one isolated flake found on the surface of a recently planted field. Although to both the west and east of this site other more substantial sites were found, no cultural material was found between them and 39B036.

Recommendation

This site, located in a plowed field, yielded only one flake. No testing program is recommended.

39B037 (52082A) The Curious Alice Site (see figures 26,27 and 28)

Description

The prehistoric component of this site was discovered in a

road cut at the Apple Tree boat ramp (located between Snatch and Charley Creeks). Bone was found eroding out of this cut bank in several locations and at two different depths, one 1.4 meters below present ground surface and the other 1.8 meters below ground surface. The upper deposit also was found to contain a small lens, 1.46 meters below ground surface, which contained charcoal, ash, bone, and cultural material. No historic artifacts were observed in the cut bank, but some were found below it which derive from the historic component located on top of the terrace (52082B). This site is presently located about 5 meters from the shore of Lewis and Clark Lake.

Collection

- A. Two body sherds. One of these is approximately 9 mm. thick and exhibits a series of parallel trailed lines on the exterior. This sherd is tempered with a rather coarse grit, and the color is tan on the interior and gray on the exterior. The second sherd is much thinner, approximately 5 mm., and is much finer in manufacture. This sherd exhibits what may be the lower portion of a rim panel with two parallel, slightly diagonal, lines trailed on the surface. The temper is a medium grit, and the colors are gray on the exterior and tan on the interior.
- B. Two bifacially flaked tools; one made of a tan silicified stone, the other is made of a dark gray, poor quality, stone.
- C. One utilized flake of heat-treated chert.

- D. Three fragments of burnt bone which were found in the charcoal lens.
- E. Eighteen unidentified bones, apparently bison. One of these bone fragments clearly exhibits a butchering mark.
- F. One bison tooth.
- G. Three glass vessel fragments. One of these is a blue glass bottle fragment; another is a clear purple bottle rim with an extruded lip; and the third is a glass vessel fragment with a raised grid design on the exterior.
- H. Two stoneware fragments. One is cream colored on the exterior and black on the interior, while the other is cream colored on one side and blue on the other.
- I. Two unidentified iron fragments.

Discussion

The historic materials in this collection are undoubtedly associated with the historic component of this site, which will be discussed more fully in the next collection.

No cultural affiliation can be made from the prehistoric material in the collection. However, it should be possible, given the frequent occurrence of charcoal and ash along with the heat-treated flake, to accurately date this site. The association of bison bone with the cultural material indicates that the inhabitants of this site had a subsistence which was, in part at least, dependent on bison hunting.

39B037 (52082B)

Description

The historic component of 39B037 was found on the flat terrace, of which the cut bank forms the south boundary. The historic component consists of house foundations and a cistern. This component of 39B037 is thought to be part of the townsite of Bon Homme.

Collection

- A. Three whiteware fragments, one of which is the base of a plate and has the words "STONE CHINA" written on the underside. This mark is not particularly diagnostic; stone china or ironstone china postdates 1872, however (Gates and Ormerod 1982: 8).
- B. One fragment of a porcelain plate with a faint decoration around the rim in green and gold.
- C. One fragment of a milk glass bottle with the word "LIN" written twice on the underside. This could represent the Lincoln Pottery Works, which was active in Liverpool, Ohio, between 1867 and 1891 (Gates and Ormerod 1982: 341).
- D. Two bottle necks and rims with rounded lips, not flanged extruded lips.
- E. Five clear bottle fragments, one of which shows a faceted exterior.
- F. One purple glass bottle fragment, with several flat facets on the exterior.
- G. Three nails--two round and one square.
- H. One curved iron "link" with the number "317" etched on one surface.

- I. One iron link, different in form from the one just described; this one is straight and narrow with no markings.
- J. One large file fragment.
- K. One iron fastener, possibly off of a harness.

Discussion

As mentioned in the previous paragraph, it is thought that this site is part of the townsite of Bon Homme (1858-1885). The collection indicates an occupation prior to the turn of the 19th century. The fact that some historic materials were found in the cut bank at the south end of this terrace indicates that the site is presently being eroded. The presence of historic materials in the cut bank also indicates a stratified deposit containing both historic and prehistoric materials.

Recommendations

The geomorphic context of this site should be investigated by profiling the areas which yielded cultural materials and bone. These should be studied by a geomorphologist. If a significant cultural deposit is found, its extent should be traced along the profile. Coring into the terrace is not proper since Corps property does not extend a significant distance back from the cut bank.

The historic component at the site is also significant, as it is part of the early town of Bon Homme. Most of the remains of the town and associated features lie on private land. These include

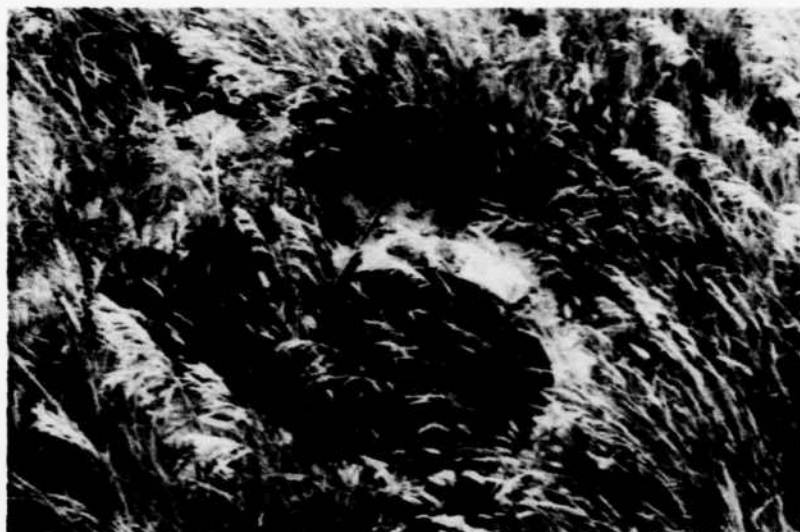


FIGURE 26. Cistern at 39B037, historic component.



FIGURE 27. Remains of a house foundation at the historic component of 39B037.



FIGURE 28. View to the southwest of 39B037, showing the present ground cover.

house foundations, the road from the steamboat landing to the town, traces of the old stage road, a cemetery, and a reconstructed schoolhouse. This site is of considerable historic significance, and the preservation of some features is of interest. It has the potential for supporting a major archeological investigation and for development into a tourist attraction. Since most of the site lies outside of the Corps boundaries, federal involvement in any such project would be minor. Substantial investigation of the tiny part of the site on Corps property would be inappropriate in the absence of an overall plan for the site. Therefore, no testing program is recommended at this time.

39B038 (UU)

Description

Site 39B038 is located along a dirt road next to a plowed field in the upland area near the Waoka Club. This site is located about 400 meters northwest of Lewis and Clark Lake.

Collection

- A. One U. S. penny dated 1900.
- B. One fragment of ferric metal with a hole drilled in it.
- C. One sherd of whiteware.
- D. Two historic ceramic fragments (?) with a fine black line design.
- E. One unifacially flaked piece of Bijou Hills quartzite.
- F. Four chert flakes, two of which are heat treated.

Discussion

Both historic and prehistoric materials are found at this site. The historic component can be dated with some certainty to around 1900. The prehistoric component also has promise for dating, since fire is indicated by the heat-treated flakes. Both of the components present appear to be rather sparse, and do not hold much promise for helping us understand the prehistory and history of the region.

Recommendations

No further work is recommended for this site which appears to contain minor historic and prehistoric components.

39B039 (61582D)

Description

This site was found on the upland area west of Running Water. It consists of a series of foundations for some sort of electric poles, presumably at a point where the electric lines crossed the Missouri River. These foundations formed a rectangle 3 meters by 24 meters, the narrow width facing the river.

Collection

A. One clear green glass electrical insulator.

Discussion

The one item collected confirms our hypothesis that this was a foundation of poles for an electric line. No other materials were observed or collected.

Recommendations

No further work is recommended for this site.

39BO40 (61582A AND 61582B)

Description

This site is located about 300 meters west of the Running Water ferry boat landing. The site consists of two areas where cultural material was located. The first of these consists of a pair of depressions. Material was recovered from both the surface and shovel tests at this location. The second location was an isolated find of a heat-treated flake a few meters west of the first location.

Collection

- A. One basal portion of a side-notched projectile point.
- B. One utilized flake.
- C. Four whiteware fragments with no markings or decoration.
- D. One brown glazed stoneware fragment.
- E. Two square nails, recovered from a shovel test.
- F. One fragment of iron.
- G. One chunk of coal.

Discussion

Both prehistoric and historic materials are present in the collection. It may be that the depressions are of prehistoric origin, possibly houses that were later used as trash pits during the historic period. This phenomenon was observed at one other site during our survey (39B045).

Recommendations

This site is of considerable interest because of the presence of the possible house depressions. These should be tested by coring to determine whether or not they are of cultural origin. If they are, test pits should be used to sample the fill in order to determine age and cultural affiliation.

39B041 (6782B)

Description

This site was found in the middle of a plowed field just east of the mouth of Emanuel Creek. This area is entirely upland.

Collection

- A. One rim sherd with a rounded lip and indentations on the lip rim juncture. The temper appears to be shell.
- B. One basal portion of a corner-notched projectile point, approximately 2 centimeters long.
- C. Two bifacially flaked tool fragments.

- D. One large utilized flake made of pink chalcedony.
- E. Two flakes.
- F. One chert chunk.
- G. Four waterworn pebbles.
- H. Two unidentified (deer ?) bone fragments.
- I. One brown and white stoneware body sherd.

Discussion

Three components may be present at this site. One is historic, while the sherd suggests an Oneota component (which could be historic in age), and the point indicates an earlier prehistoric component.

Recommendations

A controlled surface collection of this site should be made under good conditions in order to determine appropriate locations for a few test pits. The latter would be excavated in order to determine whether any undisturbed cultural deposits lie beneath the plow zone. At least two test pits should be made in the unplowed area of the site at the base of the hill.

39BO42 (61582C)

Description

This site is an isolated find spot, 1300 meters west of the Running Water ferry boat landing. The find consists of one projectile point fragment, broken across the notches, with the basal

portion missing. The fragment measures 3.3 cm. in length. The point was found in the edge of a bluff overlooking Lewis and Clark Lake. No other cultural materials or features were noted. Based on the lack of other cultural material, it would seem that this is a rather insubstantial site, with little value for the understanding of the cultural sequence in the region.

Recommendations

No testing is recommended for this apparently isolated find.

39B043 (EE)

Description

Site 39B043 was found 50 meters north of Lewis and Clark Lake on a gently sloping portion of uplands near Charley Creek Recreation area. The site consists of a 50 meter by 50 meter scatter of historic and prehistoric material, all of which was found on the surface of the newly planted field.

Collection

A. Twenty-six whiteware fragments. Ten of these are rims and one is either a handle or a leg. No decorative motifs were observed on these fragments.

B. Sixteen stoneware fragments. Fifteen of these are brown, one of which is a rim, two are base fragments, and one appears to be a handle. The sixteenth sherd is tan with a blue band.

- C. One ceramic artifact which appears to be an historic pipe bowl fragment, although this is by no means definite.
- D. Fifteen glass bottle fragments. Two of these have a raised design, one is dark purple, one is reddish, and one is green. One of the fragments is the rim of a bottle.
- E. One brick fragment.
- F. Four fragments of iron artifacts. One of these has a sort of nipple formed on it. These artifacts have not been identified.
- G. One heat-treated chert flake, which appears to have been utilized.
- H. One piece of scoria with possible use-wear.
- I. One chert chunk or core, which still retains some of its cortex.
- J. Two fresh water mussel shell fragments.
- K. One possibly worked piece of stone.
- L. Fragment of a canine mandible with two teeth, including the canine, present.

Discussion

The historic component of this site is probably somehow associated with 39B048, a small historic farmstead or village, located about 150 meters to the northwest of 39B043. The material collected is suggestive of a late 19th century midden. The prehistoric component here is rather sparse and offers little hope for significant deposits.

Recommendations

This site consists of an historic midden mixed by plowing with a minor prehistoric component. No testing is recommended.

39B044 (FF)

Description

This site consists of bone and flakes located on the surface of a talus slope. Directly above the point where the bone and flakes were found was a lens of charcoal in the cut bank. This lens was about 30 cm. below the present ground surface.

At this point, it may be noted that a number of sites were located in this cut bank. The cut bank, or cut banks, were formed by two streams eroding out of a rather large terrace near the Bon Homme Hutterite Colony. A large amount of bone and charcoal were observed at several locations in this cut bank system. These sites will be described later in this report.

Site 39B044 itself is located on the west bank of the eastern stream. It extends for approximately 3 meters along the bank. At present, it is eroding very rapidly, as are all the sites in this cut bank system.

Collection

- A. One flake of heat-treated white chert.
- B. One pressure retouch flake of white chert.

C. One unidentified long bone fragment.

Discussion

The presence of both charcoal and heat-treated flakes at this site makes it possible to date it by either radiocarbon or thermoluminescence methods. Since this site is part of this larger complex, it would be interesting to further understand its relationship, both culturally and temporally, to this complex.

Recommendations

These sites are all located in the cut banks of two adjacent streambeds. Animal bone and prehistoric cultural items are eroding from the banks at six spots designated by these site numbers. All may represent fairly ephemeral hunting camps, as no clearly-defined cultural horizons were visible. Nonetheless, the sites as a group have some potential for clarifying the geomorphology of the region. We recommend that the cut banks be cleaned and profiled at the points where bone and cultural materials are eroding so that a geomorphologist can study them. Datable and culturally diagnostic materials should be collected whenever possible. Because these streams probably meandered back and forth, a coring program would probably yield more confusion than clarification. Therefore, the testing should be limited to profiling. Unless some very rich deposits are uncovered, the profiling will probably constitute adequate investigation for most of the sites in this group.



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FIGURE 29. Panoramic view of the Terrace Complex, taken from the bluff top at 39B045. Lake is to the south.

39B045 (II)

Description

This site is also located in the area around the Bon Homme Hutterite Colony. However, this site is located on a low bluff top to the east of the terrace complex. Site 39B045 consists of a series of depressions on this bluff top. Shovel tests into these depressions yielded charcoal, bone, flakes, and ceramics. Ant or termite mounds also yielded such material as ceramics, charcoal, and carbonized seeds. Ceramics were also noted on the surface of the plowed field which is immediately adjacent to the site, but located on private property. The depressions measured approximately 4 meters by 5 meters.

Collection

A. One large Woodland rim sherd, 12 mm. thick. This sherd is tempered with a very coarse sand temper. Both the interior and exterior surfaces are smoothed and gray. The orifice diameter of this pot must have been quite large, as there is very little discernable curve to this rim sherd.

B. Four Body sherds: 1) This sherd is 4 mm. thick, smoothed on both the interior and exterior surfaces, and tan in color. The temper for this sherd is a fine grit. 2) This sherd is 75 mm. thick with a brown cord-marked exterior and a tan interior. The temper is a medium grit. 3) This third body sherd is 6 mm. thick, heavily cord marked, and gray on both the interior and exterior surfaces. A medium thick

grit serves as the temper. 4) This last sherd is 3 mm. thick with a smoothed-over cord-marked exterior. The color on both surfaces is tan, and it is tempered with a very fine sand or grit.

- C. Eleven flakes of various local materials, such as Bijou Hills and Sioux quartzite, and a gray chert.
- D. Nine charred or carbonized corn kernels.
- E. Ten unidentified charred or carbonized seeds, resembling wheat.
- F. One distal epiphysis of an elk humerus.
- G. One fragment of enamel from an unidentified canine tooth.
- H. Thirty-one unidentified bone fragments.
- I. Several small pieces of charcoal.
- J. One metal fork, marked "KU".

Discussion

This site may have several components, including Woodland, Historic, and possibly Great Oasis. A Great Oasis component may be indicated by the thinner, more finely made ceramics, and by a Great Oasis rim sherd found at the base of this bluff at site 39B058. The use of fire at this site is indicated by the charcoal commonly found there. It should be possible to collect enough charcoal for carbon dating.

The site appears to be a fairly rich village deposit. Evidence indicates a hunting and farming subsistence, although the carbonized seeds could be a later deposit. The historic component most likely consists of trash, dumped in the depressions by the Hutterites from

the immediately adjacent Bon Homme Colony. This assumption is supported by the fact that the prehistoric cultural material was generally found at a depth of 20 cm., while the historic material is concentrated in the upper 5 centimeters. Supporting this idea further is the fact that this area is presently used by the Hutterites for disposal of trash.

Recommendations

This site may have considerable potential, but the testing program will have to differentiate at least two components. We recommend coring in and between depressions to determine the distribution of cultural material, and a single trench 2 meters wide across the width of one depression to obtain stratigraphic information, diagnostic cultural remains, and datable materials. A transit or alidade should be used to map the site.

39B046 (GG)

Description

This site is a light scatter of artifacts located immediately to the west of the terrace complex. This area is flat uplands, and when we located 39B046, it had just been planted in grass. The site itself measures approximately 30 meters by 30 meters.

This site was originally discovered by Howard and Gant and was designated 39B0205. Another site, the Colony site, was given the same designation, however. To further complicate matters, one of

the sites designated 39B0205 was previously designated 39B0201, and this had led to some confusion between it and the Tabor site (also 39B0201). Howard and Gant's 39B0205 also ended up with two different names--the Basingden site and the Cornfield site. Basingden is the name of the former landowner, and this should be the preferred name.

Because of the confusion regarding the various atavars of 39B0205, we obtained a new number, 39B046, for this site. This was a necessary move because two sites were being confused under a single numerical designation, but in truth, the field party had not been able to sort out the confusion regarding 39B0205 and was not aware that they had rediscovered the site.

Howard and Gant (1966: 12) reported a meager collection of flakes, fire-cracked rock, and an unspecified number of end scrapers. Our collection was equally sparse.

Collection

- A. One end scraper made of gray chert which retains some cortex.
- B. One side scraper made of dark gray chert.
- C. Three flakes, two of Bijou Hills quartzite; the third of quartz.

Recommendations

No further work is recommended for this site.

39B047 (ZZ)

Description

This site was located along the shoreline approximately 200 meters east of the Bon Homme Hutterite Colony. The deposit consists of a scatter of materials 10 meters by 15 meters in size. No collections were made, but historic materials were noted. Such things as an iron spoked wheel, a wagon frame, and farm implements were found. There was no indication of foundations anywhere on the site. It is possible that this is part of the Hutterite Colony that was occupied before the construction of Gavin's Point Dam. The Colony at that time included land in the lowlands south and slightly east of its present position.

At present, this deposit is subject to erosion and wave action. Some effort should be made to further understand the nature of this deposit before it is destroyed.

Recommendations

No archeological testing is recommended for this recent (post Gavin's Point Dam) material.

39B048 (QQ) (see figures 30,31 and 32)

Description

This site is located on a terrace next to the cove at the Charley Creek Recreation area. This cove is the flooded mouth of a small unnamed stream. Site 39B048 consists of an intact storm cellar, a



FIGURE 30. Storm cellar at 39B048.



FIGURE 31. Historic house foundation at 39B048.

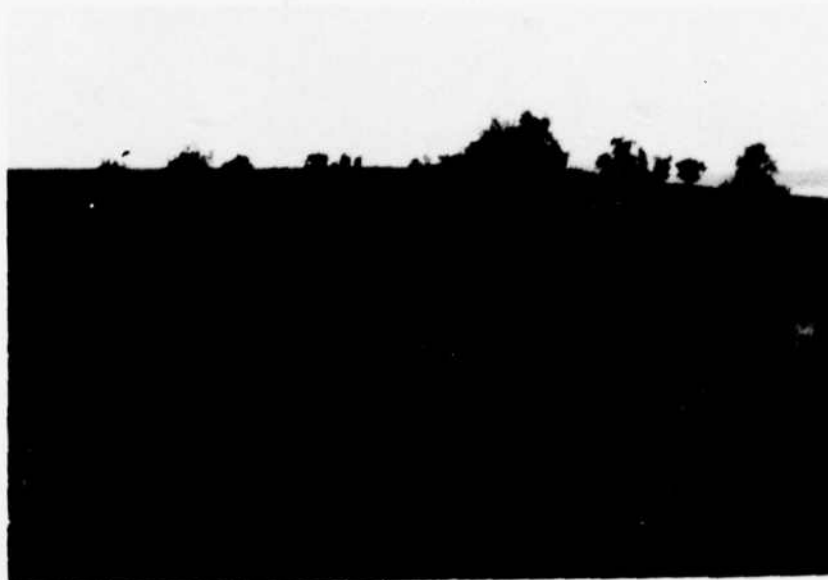


FIGURE 32 . View, to the southeast, of the two depressions
at 39B048.

house foundation, and two large depressions measuring 16 m. by 5.9 m. by 7.2 m., respectively. The entire site covers an area of 25 by 40 meters. The house foundation is of poured concrete and dates to the 20th century.

No collections were made, but the material seemed to be of a relatively recent origin. In fact, a cluster of buildings is shown on a topographic map that dates to 1949. It is likely that this area was abandoned when Gavin's Point Dam was constructed. The only record of ownership shows that it is part of the Bon Homme Hutterian Brethren Colony (cf. Chapter V).

Recommendations

No test excavations are necessary at this time.

39B049 (BBB)

Description

Site 39B049 was discovered eroding out of a dark stratum along the shoreline approximately one mile west of the Tabor Recreation area. The site consists of bone eroding out of the dark layer at a depth of one-half meter to two meters. Ceramics were found on the talus below the bone.

Collection

A. One large body sherd, 7 cm. by 10 cm. The exterior is gray and heavily cord roughened. The interior is heavily carbonized. The temper for this sherd is medium fine grit. The thickness is 7 mm. Cultural affiliation is probably Woodland.

B. One bison lumbar vertebra.

Discussion

The site has already undergone a great deal of erosion, which may have destroyed much of the deposit. The collection is not large enough to allow analysis.

Recommendations

The cut bank should be cleaned and profiled and examined by a geomorphologist. Coring should be used to determine how far inland the site and paleosol extend. Datable materials should be collected, if possible.

39B051 (CCC)

Description

This site was discovered as a surface deposit at the southwest corner of the sewage lagoon at the Bon Homme Hutterite Colony. Site 39B051 consists of a scatter of flakes and bone, probably exposed and redeposited by the construction of the sewage lagoon.

Collection

A. One basal portion of a large projectile point. The base is concave with no evidence of basal grinding. There is no evidence for notches on this portion of the base. The point is rather crudely made. Cultural affiliations are most likely Archaic or

Woodland.

B. Seven flakes of various local cherts. Two of these are small pressure flakes.

C. Seven pieces of burnt bone.

Discussion

If the site is an in situ deposit which was merely exposed by the construction of the sewage lagoon, rather than being redeposited, it should be possible to recover charcoal for dating, since the presence of the burnt bone indicates the use of fire at this site.

An early occupation, either Archaic or Early Woodland, is indicated by the projectile point base. The lack of any ceramics argues for the former.

Recommendations

Testing at this site should consist of one or two test pits to determine whether there are any cultural materials in situ. If there are, the site boundaries should be mapped and the nature of the human occupation determined.

39B052 (BB)

Description

This site was found on the surface of the flat upland area immediately to the west of the terrace complex near the Bon Homme Hutterite Colony. The site consists of a scatter of lithics and

and bone 30 meters by 100 meters in size (east-west and north-south).

Collection

- A. Two large grinding stones.
- B. One flake of Bijou Hills quartzite.
- C. One chert core.
- D. Eight rocks, probably not of cultural origin.
- E. Ten bone fragments, one of which is burnt.
- F. One whiteware handle fragment with no decoration.

Discussion

This collection was made immediately after the field had been plowed, making conditions less than optimal. Thus, the collection can be considered a minimal representation of what is to be found at the site. The grinding stones are suggestive of a habitation site, but cultural affiliation is unknown.

Recommendations

This site should have a controlled surface survey followed by excavation of test pits in appropriate locations. Datable materials should be collected, if possible.

39B053 (KK)

Description

Site 39B053 is located on the west bank of the easternmost drainage at the Bon Homme terrace complex. The site consists of

a charcoal and ash lens in the cut bank at a depth of 1.6 meters. Two large mammal bone fragments were collected from this site. The presence of the ash and charcoal lens was considered reason enough for this location to be called a site. This is also in the terrace complex, which may give some support for the identification of this location as a site.

As part of the large complex, this site could yield some information as to the cultural activities that took place here. Some effort to study this and the other sites in the area should be made before they are lost to erosion.

Recommendations

Discussed under 39B044.

39B054 (DD)

Description

This site was a small lithic scatter on the uplands between the terrace complex and Charley Creek. The scatter occupied an area 10 meters by 10 meters in size. Attempts to relocate the site after it had been collected once, failed to note any additional cultural material, suggesting that the site was of an ephemeral nature.

Collection

A. One heat-treated chert flake.

- B. Three flakes, two of Bijou Hills quartzite.

Discussion

The fact that the site was not relocated a few days after its discovery may indicate that this location was used only temporarily, perhaps for butchering a kill. If this were so, we would not expect to find much more at this location. However, since this field is presently under cultivation, more material could show up after the next plowing.

Recommendations

No further work is recommended at this site.

39B055 (HH)

Description

Site 39B055 is located on the flat uplands immediately to the east of Charley Creek. It was found in a plowed field. The site extends approximately 200 meters in an east-west direction, and has a width which varies from 40 meters to 100 meters in the north-west dimensions. It consists of a scatter of glass, bricks, and lithic implements.

Collection

- A. Twelve brown or yellow stoneware vessel fragments.
B. Nineteen whiteware fragments.

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THE GORGE OF THE MISSOURI: AN ARCHEOLOGICAL SURVEY OF
LEWIS AND CLARK LAK. (U) WICHITA STATE UNIV KS
ARCHAEOLOGY LABS D J BLAKESLEE ET AL. MAY 83

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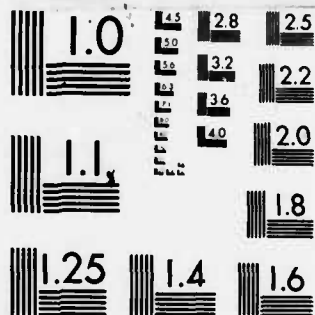
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

- C. Nine fragments of clear green or transparent window glass.
- D. Five clear green or transparent bottle glass fragments.
- E. One brown glass bottle lip fragment, with a flanged lip which was used with a cork, or some other type of stopper.
- F. Two milk glass fragments.
- G. Two small iron fragments.
- H. Seven mussel shell fragments.
- I. Five bone fragments from a large mammal.
- J. Seven chipped glass tools. All of these are various types of scrapers, one of which is quite well made of a piece of clear lavender glass.
- K. One bifacially flaked tool.
- L. Three chert and chalcedony flakes.
- M. Seven brick fragments.

Discussion

The presence of the chipped glass scrapers immediately attracts attention. These artifacts found in association with stone tools and historic ceramics suggest that this was an historic site, probably Yankton. Structures, perhaps cabins and more substantial houses, are indicated by the window glass and brick fragments. The yellow stoneware is distinctive and has been dated to the period from 1840 to 1870, which would cover the period when this area was part of the Yankton reservation.

If all of the materials represent a single component, then a

number of stone tool types were retained during at least the early part of the reservation period. Also, new materials were being utilized by these people for tools, as evidenced by the glass scrapers. We can infer by the presence of these tools, and in particular, the scrapers, that many of the activities that were practiced in the pre-reservation period were retained during at least part of the reservation period. In particular, hide processing is indicated by the scrapers.

Recommendations

This site has considerable interest as a probable historic period Native American habitation. A controlled surface survey should be followed by test pits to determine the extent and depth of the site. Every effort should be made to locate the remains of structures. The site should be carefully mapped.

39B056 (AA)

Description

This site is part of the terrace complex near the Bon Homme Hutterite Colony. It is located in the west bank of the westernmost drainage. The site consists of bone, charcoal, and flakes eroding out of the cut bank from a depth of 80 cm. below the ground surface. This deposit extends for 10 meters along the cut bank.

Collection

- A. One, possibly heat-treated, flake.
- B. One small pressure flake.
- C. One fragment of bison mandible, with one tooth retained.
- D. One bison tooth.
- E. Seven unidentified bone fragments.

Discussion

The occupation of this site could be dated by using either the charcoal or heat-treated flakes present at this location. The relationship between this site and the other sites in this terrace locality should be studied further.

Recommendations

Discussed under 39B044.

39B057 (00)

Description

This site is another in the terrace complex near the Bon Homme Hutterite Colony. It, too, is located on the west bank of the westernmost drainage, just about 20 meters downstream from 39B056. This site consists of bone and lithics eroding from the cut bank at a depth of 1.2 meters below the present ground surface.

Collection

- A. One flake of gray chert.
- B. Eight unidentified bone fragments.

Discussion

No diagnostic artifacts or datable material are indicated by the collection. However, as part of the terrace complex, this site should be investigated in order to understand its relationship to the rest of the sites in that complex.

Recommendations

Discussed under site 39B044.

39B058 (PP)

Description

This site is also part of the terrace complex. It is located on the east bank of the easternmost drainage. It consists of a Great Oasis rim sherd found on the top of the talus, along with some bone. The talus starts at a depth of 1 meter below the present ground surface.

Collection

- A. One Great Oasis high rim sherd with parallel diagonal lines marking the lip-rim juncture, parallel horizontal lines on the panel, and two diagonal lines indicating a possible pendant triangle motif.

B. Five unidentified bone fragments, one of which exhibits butchering marks.

Discussion

The presence of the Great Oasis rim sherd establishes the only definite cultural affiliation for a site in the terrace complex. The butchering marks on the bone fragment strongly suggests the association of the faunal remains with cultural activities. Radio-carbon or thermoluminescence might be used to date the cultural horizon.

Recommendations

Discussed under 39B044.

39B059 (LL)

Description

This site is located in the east bank of the westernmost drainage at the terrace complex. Site 39B059 consists of two deposits, both approximately 45 cm. below the present ground surface, separated by about 3 meters of sterile fill. Both deposits are composed of a charcoal and ash lens with associated bone deposits.

Collection

- A. Charcoal fragments.
- B. Nine skull fragments from one large mammal. Not enough remains

to identify the species, but it appears to be either deer or bison.

C. Two nasal bones from one large mammal, possibly bison.

D. Four unidentified bone fragments.

Discussion

The presence of the charcoal and ash associated with the bone was considered reason enough to consider this location as a site. All the faunal remains seem to be from the skull of a single large mammal, perhaps a bison.

Although the association of this site with cultural activity is by no means certain, it should be possible to date the site using the charcoal for carbon dating. Further study of this site should be undertaken in order to further study and understand the terrace complex.

Recommendations

Discussed under 39B044.

39B0201 The Tabor Site

Previous Investigations

This site was investigated by Wesley Hurt in the summer of 1961 and subsequently by the Northwest Chapter of the Iowa Archaeological Society in 1962 and by Gant in 1963. The latter test, which consisted of eight 5-foot squares, is not reported in the report of Gant's 1963 survey (Howard and Gant 1966). That publication also

incorrectly referenced Hurt's (1961) publication of his work as having occurred in 1952--rapid publication indeed!

Hurt recovered Loseke Creek focus pottery types such as Ellis Cord Impressed and Scalp Punctate from a buried component. The other cultural material consisted of flakes, scraps of animal bone, and flecks of charcoal. This horizon lay some 18 inches below the ground surface and was exposed in a road cut. Hurt's excavations consisted of six 5-foot squares excavated to the base of the cultural horizon. According to Howard and Gant (1966: 8), the subsequent unreported excavations consisted of 12 units dug in 1962 and 8 made in 1963.

In 1982, we located a series of shallow depressions north of the road at the Tabor site. Because the site was found prior to having marked the field maps with previously discovered sites, these were assumed to be lodge depressions. These were sampled by shovel tests, but only one scrap of animal bone was found. Apparently, they represent unfilled excavation units from one of the earlier investigations of the site. Gant's 1963 work is the most likely source, since he excavated eight squares and we observed seven slight depressions.

Description

The site is located on a broad terrace at the point where an intermittent stream entered the Missouri River floodplain. The terrace is restricted primarily to the east (left) bank of the

stream. On the west, a bluff rises 100 feet above the site level, offering excellent protection. The bluffs in this area are highly dissected. In 1961, cultural material was eroding from a road cut and in 1982 the same situation prevailed.

It is difficult to estimate how much of the site remains undisturbed, but a total of 26 5-foot squares have been reported. The content of the cultural horizon appears to be quite sparse; Hurt reported a minimal amount of material, and the subsequent investigations are reported to have yielded no categories of material not reported by Hurt (Howard and Gant 1966: 8). Our own investigation yielded only six pieces of bone, five of which were charred.

Recommendations

Doubtless, some of the original Late Late Woodland cultural horizon remains undisturbed. Since it yielded Scalp Punctate and Ellis Cord-Imprinted pottery but not other types, it is conceivable that it is earlier in this period than sites which have yielded Ellis Plain, Randall Incised, and Great Oasis types. Datable samples should be recovered in order to date this complex. The area south of the road, which appears to be less disturbed than that on the north, should be tested. Finally, several deep cores should be taken to test for the presence of deeper components. If this terrace built up in the same way as others which have yielded sites, it is likely that there are deeply buried cultural horizons present.

39B0202 The Crandell Site

This spot was investigated by Harold Huscher of the River Basin Surveys in 1956 when he recorded a nearby site. He found several pieces of animal bone eroding from the banks of an unnamed intermittent stream downriver from the Tabor Recreation area. Three pieces were found scattered along a distance of approximately 100 meters. We resurveyed this drainage in 1982 and found a single piece of animal bone a considerable distance upstream from Huscher's reported find spots. This and at least two of the pieces found by Huscher came from private land north of the government property line. Thus, most if not all of these finds lie outside the project domain. Furthermore, no evidence has been detected which indicates a human habitation there. This is not to say that one is not present, however, as the other drainages of this size along the lake margins yielded sites. It is likely that one or more are present but not currently exposed in the cut banks.

39B0205

This site number has been associated with two different sites and three site names. Furthermore, one of these sites was formerly numbered 39B0201, and a second asserts that 39B0205 was used by Howard and Gant for the Tabor site. The latter statement is false. The Tabor site (which has been designated both 39B0101 and 39B0201) was not confused by Howard and Gant with any of the sites included in their report. One of the sites which has been labelled 39B0205,

however, may be the same as the site that Howard and Gant designated as 39B0208. That problem is discussed under 39B0208 in order to keep the present discussion as coherent as possible.

Site 39B0205, the Colony site, is located east of the Bon Homme Hutterite Colony, at the mouth of an intermittent stream. The state site survey form attributes the discovery to a 1951 River Basin Survey party, which must mean Fenenga and Wood. The new designation, 39B0205, was assigned by R. B. Johnston in 1966 to avoid confusion with the Tabor site. Unfortunately, Howard and Gant had already used this second number, but apparently the paperwork had not been processed.

We propose that 39B0205 be retained for the Colony site to avoid future confusion. The other site of the same number has been renumbered by us as 39B046. Site 39B0205 yielded only two pieces of bone, a flake of chalcedony and a lead ball in 1951. We found nothing at the spot. Either the site has eroded away, or it is located slightly inland from the shore, off government property. Our survey of this spot was conducted from a canoe under less than ideal circumstances, and we cannot preclude the possibility that the site lies near but not on the shoreline.

39B0206

Howard and Gant (1966: 12) found this site eroding from the cut bank of Lewis and Clark Lake at a high point of ground midway between two small drainages east of Springfield, South Dakota. A

cultural horizon had been exposed by erosion of the slope above the cut bank, and a human burial was also exposed. The latter was a secondary burial of an adult male interred in an oval pit. The crushed skull, ribs, femora, ulnae, and ilium were recovered. The skull was stacked on top of the long bones with the ilium placed at one end. This indicates that the skeleton was completely defleshed prior to burial and that not all of the bones of this person were placed in the burial pit.

The materials recovered from the test excavation (a 5-foot square) include one ovoid knife with a bevelled edge (Howard and Gant 1966: Plate 16, b), stone flakes, fire-cracked rocks, and broken bison and deer bones. None of these materials are diagnostic, but Gant reconstructed the skull and pronounced it similar to those from Woodland burial mounds along the James and Big Sioux Rivers. Since Woodland crania from the Dakotas are very similar to much later ones (Key 1982), this impressionistic assignment must be taken with a grain of salt.

We surveyed this portion of the lakeshore both from a boat and on foot. The sloping ground above the cut bank had a sparse vegetative cover, but in spite of excellent visibility, we failed to relocate the site. The legal description given by Howard and Gant suggested one location, while their map of the reservoir indicated another spot close by. Both were checked, but no cultural materials were found. Apparently, the site had eroded away since 1963 (if either of the site locations is correct).

39B0207 The Roy Coleman Site

This site was found by Gant on a high terrace west of a small stream which is described as being a short distance downstream from 39B0206 and west of Sand Creek (Howard and Gant 1966: 13). A legal description was also given, but it does not correspond to the verbal description of the location. The location on their map is not particularly helpful, as no topographic features are indicated.

Consideration of the map, verbal description, and legal description indicated one stretch of the lakeshore as the most likely location for the site. No geomorphic features such as terraces or alluvial fans were found west of the Apple Tree housing development. Thus if the verbal description of the site location is correct, either both the map and legal descriptions are incorrect or the site has been lost to erosion. It is possible that the site was located in what is now the Apple Tree development; if so, it has been lost to construction and the location is not on government property. Howard and Gant (1966: 13) noted that most of the site was on private land.

What Gant observed at the site was cultural material eroding from a gray soil in the cut bank. More material was found on the site surface. The site dimensions were estimated to be 150 feet EW by 600 feet NS. The material observed in the bank occurred up to 1 meter below the surface. Gant collected two styles of projectile points, one piece of pottery, end scrapers, hammerstones, and sandstone abraders. One projectile point is a medium-sized corner-notched

or expanding stem specimen which could be of Late Archaic to Middle Woodland age. The other form is a small plain triangular specimen which probably postdates the Woodland period. The single sherd was a very thick, grit-tempered body sherd, probably of Middle Woodland age. Thus, two components may have been present at the site.

Since our survey failed to relocate this site, no recommendations can be made. One correction to the records can be made, however. The site survey form for this site lists an article by Hoffman and Brown as referencing this site. This is incorrect; Hoffman and Brown refer to a Colemans site at the mouth of the Cheyenne River, some 300 km. away from 39B0207.

39B0208 The Bon Homme Site

This site was reported by Howard and Gant as lying on a flat terrace to the east of the Bon Homme Hutterite Colony. At some point, it appears to have been confused in the records with one of the sites labelled 39B0205, and it is now difficult to sort out the problem. On the state site survey forms, both sites are listed as being on the property of the Bon Homme Colony and east of the colony buildings. The legal descriptions given to the two sites are identical on the site forms.

Howard and Gant's (1966: 12-13) report, however, differentiates between the sites and does not place them close together. Site 39B0208 is described as being in the position mentioned above. Their site map places 39B0208 east of the location of the colony,

but puts 39B0205 (i.e., their 39B0205) well to the west, near Charley Creek.

They reported only some bone and stone refuse from the site and one biface. They also describe it as lying in a plowed field. The site may be the same as the one designated 39B0205, the Colony site, on the state site survey form. This is not the same site as Howard and Gant's 39B0205. The site survey forms give the Colony site and 39B0208 the same legal description to the nearest quarter of a quarter section, but that for 39B0208 was penciled in at some time after the form was typed. Howard and Gant did not give as precise a location, and their description of the site does not mention the intermittent stream on which the Colony site is located.

To sum up, 39B0208 may be the same site as one of the two sites that has been labelled 39B0205, specifically the one called the Colony site. This is not to be confused with the 39B0205 reported by Gant and Howard. If the two sites are not the same, then 39B0208 lies west of the Colony site and is on land owned by the Hutterite Colony and, therefore, outside the project area. We found no sign of it on government property.

39B0209 (61582E)

Description

This site is located in an upland plowed field immediately to the east of Emanuel Creek. The site consists of an extensive deposit of lithics, along with a few ceramics. The deposit measures 100 meters

by 100 meters.

The site was first reported by Robert Gant (Howard and Gant 1966: 14). He described it as yielding large amounts of lithic debitage and some end scrapers and bone. No cultural affiliation was offered.

Collection

- A. One Woodland rim sherd with cord-wrapped stick marking on the lip-rim juncture and a cord-marked exterior. This sherd is approximately 1 centimeter thick with a medium coarse grit temper. The color is gray on the exterior and brown on the interior.
- B. One body sherd with a cord-marked exterior, approximately 8 mm. thick. The temper is a medium coarse grit, and the paste has a tendency to flake. The color is tan-gray on the exterior and black on the interior.
- C. One projectile point, 28 mm. long, with both the tip and basal portions missing. This point is made of a local white chert and appears to be mostly percussion flaked.
- D. One scraper made of a red chert.
- E. Six bifacially flaked tool fragments.
- F. Fourteen utilized flakes of various heat-treated and unheated cherts.
- G. One hundred and ten flakes of various heat-treated and unheated cherts, including one flake of Knife River chalcedony.
- H. Thirty chert chunks and cores.

- I. One piece of fire-cracked rock.
- J. Two large crudely made bifacial choppers. One is made of a red chert and the other is made of limestone. Both of these choppers exhibit definite wear.
- K. Two small fresh water shell fragments.
- L. A metatarsal and an astragalus of white tail deer which articulate.
- M. One large herbivore tooth.
- N. One bottle glass fragment with the letters "LULE".

Discussion

A rather extensive Woodland deposit is indicated by the collection. The bottle glass fragment appears to be intrusive, since no other historic material was found.

The presence of large quantities of heat-treated flakes, along with the fire-cracked rock, argues for the use of fire on this site. If this is so, it should be possible to recover enough charcoal for carbon dating. Heat-treated flakes are common, so it would be easy enough to use thermoluminescence to obtain accurate dates for the occupation of this site.

The collection indicates a wide variety of activities at this site. These range from cutting, hide processing and chopping, to possibly cooking, as evidenced by the fire-cracked rock. All these activities argue rather strongly for the idea that this site represents a village.

Recommendations

This apparent Woodland village should receive a controlled surface survey and a series of test squares. Eligibility for the National Register will be determined by the extent of undisturbed deposits below the plow zone.

39YK1 Yankton Mounds Site

This site originally consisted of five Woodland burial mounds in a line on a high ridge on the left (north) bank of the Missouri River. Three had been badly potted prior to 1919 when the remaining two were tested by W. H. Over (Sigstad and Sigstad 1973: 316-317). He described those that he excavated as being 30 to 40 feet in diameter and approximately 2 feet high in the center. They were spaced approximately 3 rods apart. His notes deal primarily with one of the mounds, which yielded secondary burials in the mound fill and primary (or at least more complete) burials in a central pit below the mound. At least 16 individuals were represented. No grave goods accompanied them.

There is no clear evidence that any subsequent survey ever relocated this site. Fenenga (1953) reported it, but gives no indication that he visited it. Howard and Gant (1966: 3) claim to have visited it and all of the other sites mentioned by Fenenga, but they give only Over's description of it. Over's notes locate it only to the nearest section, and it may lie outside government property. Our survey failed to relocate it, either because it did

not lie in the survey area or because potting has obliterated the low mounds.

39YK37 (53182A)

Description

This site is located on the drainage floor, approximately 1 mile east of the Tabor Recreation area. The site consists of a house built with a chalkstone block construction. This house has four remaining rooms on the first floor and three on the second. A cellar was present but could not be investigated due to the collapsed stairs. Surrounding the house are the collapsed remains of wooden outbuildings, and a cistern at the SE corner of the house. The limestone blocks, approximately 22 cm. by 30 cm., are covered with graffiti, one of which reads, "This was the house of Mary Duncan. She was my grandmother, God bless her." According to the County Assessor, the house belonged more recently to Myron Nelson. A structure is indicated at approximately the correct location in the 1910 Standard Atlas of Yankton County. Thus the house must pre-date 1910.

The site itself covers an area of 30 m. by 20 m., and is located about 200 m. north of Lewis and Clark Lake. No collections were made from this site.

Recommendations

This standing structure is of vernacular architecture of

fairly recent vintage. Historical records should be sought to determine the approximate date of construction. A ladder is needed to look in through windows to record internal architectural features (floors are unsound). The farmstead should be mapped.

39YK38 (RR)

Description

Site 39YK38 consists of an isolated find of one retouched flake found on the surface of a sloping bluff. This find is located approximately 400 m. west of the westernmost boundary of the Sioux Council Boy Scout Reservation.

The lack of any other cultural material suggests that this flake is in a secondary context. The eroded nature of the bluff in this area also supports such an idea. Obviously, not much more can be said concerning this site.

Recommendations

No further work is recommended for this site.

39YK39 (VV)

Description

Site 39YK39 is located in a plowed field between the waste stabilization ponds and the fish hatchery, immediately to the east of Gavin's Point Dam. The site consists of a scatter of lithics, bone, and ceramics, 200 m. by 170 m., at the far eastern end of this field. The artifacts and bone seem to be concentrated on two small

ridges.

Collection

- A. One Oneota rim sherd with part of the shoulder attached. This sherd is shell tempered, with a design made up of punctates and broad trailed lines. The paste is somewhat flaky, and the color is gray on the exterior, black on the interior, and the lip is brown.
- B. Three Oneota shoulder sherds, all of which are shell tempered. One is black on both the interior and exterior, with a line of punctates which parallels a trailed line. The second sherd is black on the interior and brown on the exterior, with three or four parallel trailed lines. The third is gray on the exterior and black on the interior, with evidence of two trailed lines.
- C. One shoulder sherd with a heavy sand or grit temper. The exterior surface is missing, but the interior is tan in color. The paste is crumbly.
- D. Six shell-tempered body sherds, probably Oneota.
- E. Five body sherds with fine to medium fine grit temper. Thicknesses range from 3 mm. to 7 mm. One of the sherds is heavily cord marked; the others are smoothed with no evidence of cord roughening.
- F. One whiteware fragment.
- G. One stoneware fragment, dark brown on one side, tan on the other.
- H. One large metate, or grinding stone.
- I. One mano, or handstone.
- J. Three fragments of grinding stones.
- K. Eight end scrapers made of a gray banded chert.

- L. One boring tool of the same gray banded chert.
- M. Two bifacially flaked tools of heat-treated chert and quartzite.
- N. Two large chopping tools, one of which is made of Bijou Hills quartzite, the other of an unidentified stone.
- O. Six utilized flakes.
- P. Twenty-five flakes of Bijou Hills quartzite, Sioux quartzite, and various cherts.
- Q. One large piece of scoria, apparently not utilized.
- R. One piece of burnt earth.
- S. One chunk of concrete.
- T. One small fragment of brick.
- U. One plastic button.
- V. One small fragment of iron.
- W. One fragment of fresh water mussel shell.
- X. Seven bison teeth, one of which still retains a portion of the mandible.
- Y. One bison phalanx.
- Z. Eleven unidentified bone fragments.

Discussion

This site has three components, an early component (possibly Woodland), an Oneota component, and an historic component. Of the three, the Oneota component is the most substantial, the others being minimal. The Oneota occupation seems to have been a bison butchering or processing camp. Scrapers and large butchering tools

are common in the assemblage, indicating the above interpretation. Also in support of this interpretation is the large number of bones; mostly, if not all, bison. Only the larger more identifiable bones were collected. Vegetal food processing may be indicated by the mano and metate.

There is little evidence for the use of fire at this site, other than the heat-treated flakes. It is possible that charcoal could be recovered from this site, but absolute dating could be accomplished by using thermoluminescence on the heat-treated flakes.

Recommendations

This site should receive a controlled surface survey followed by a series of test pits, in order to determine lateral extent and depth. A careful map will be required, as the surface materials appeared to be discontinuous. Intact cultural deposits below the plow zone would make this apparent Oneota bison kill site and camp of National Register significance.

39YK40 Jazz and Jill Site (see figures 33,34 and 35)

Description

This site is located in a high cut bank about 400 m. upstream from the mouth of the Lesterville stream. The site consists of five fire areas about 15 m. below present ground surface, 5 to 15 m. above the base of the cut bank. Charcoal, ash, and burned earth were noted in association with these fire areas. A possible pit was observed

approximately 6 m. south of the location with the fire areas. Using a 20-foot ladder (see Figs. 33 and 34), samples were collected, but no proof that they were man-made hearths could be obtained.

The cut bank exhibits numerous paleosols in its upper portion, some of which appear to contain fire areas. These paleosols developed in colluvium consisting of loess redeposited from the bluff above. Below these is a layer of talus consisting of blocks of yellowish shale. Underlying this is a layer of what appears to be alluvially redeposited loess which contains two fire areas. The lowest level exposed is another talus deposit of the same yellowish shale.

This site is located at the point where an arroyo which feeds from a highly dissected set of canyons cuts through the bluffs. The canyons, which are now tree and brush filled, would be fine hunting areas, and the fire areas may well represent hunters' campfires. The amount of time represented by the alluvium, talus, and colluvial deposition cannot be determined, but it is likely to cover a significant part of the Holocene. Even without a large amount of cultural material in what are probably transient occupations, this site should yield significant information regarding paleoenvironmental changes over a very long period. It may eventually serve as the lynchpin in the development of a refined local sequence and may even prove to be one of the most important sites found thus far in South Dakota.

Recommendations

This site is obviously one of the most important in the project

area; it is also going to be extremely difficult (and dangerous) to assess. The lowest deposits could be studied in some detail by people using extension ladders. The problem inherent in this approach is the overhang at the top, which supports mature trees. This presents some danger to anyone working below. It also prevents anyone from rappelling from the top in order to investigate the exposures.

Given what was observed in the field in 1982, we offer the following alternative approaches:

- 1) Simply record the exposed strata using photogrammetry, saving any attempts at direct investigation until a later time. A geomorphologist, who should be present, could use binoculars.

- 2) Use a "cherry picker" with a roofed cage to lift an investigator to the various levels to be investigated and sampled. This would allow collection of appropriate cultural, radiocarbon, sediment, and pollen samples, but would require clearing a path for the vehicle through the timber and other materials in the arroyo floor. Some care would also be necessary to avoid being stuck in the sporadic sand deposits. It is possible that the aid of the South Dakota National Guard could be obtained for this. The Guard has a summer training session headquartered at Springfield. If this sort of help is not possible, some other sort of sampling device would have to be invented to obtain the necessary soil, pollen, and gastropod samples.

- 3) The overhang could be eliminated with dynamite so that

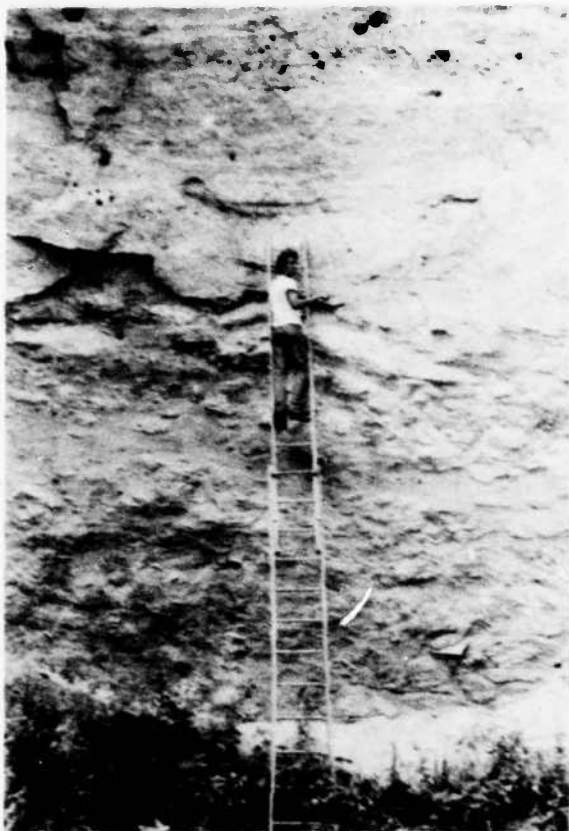


FIGURE 33. Close-up view of
39YK40. View to
the west.



FIGURE 34. Distant view of
39YK40. View to
the southwest.

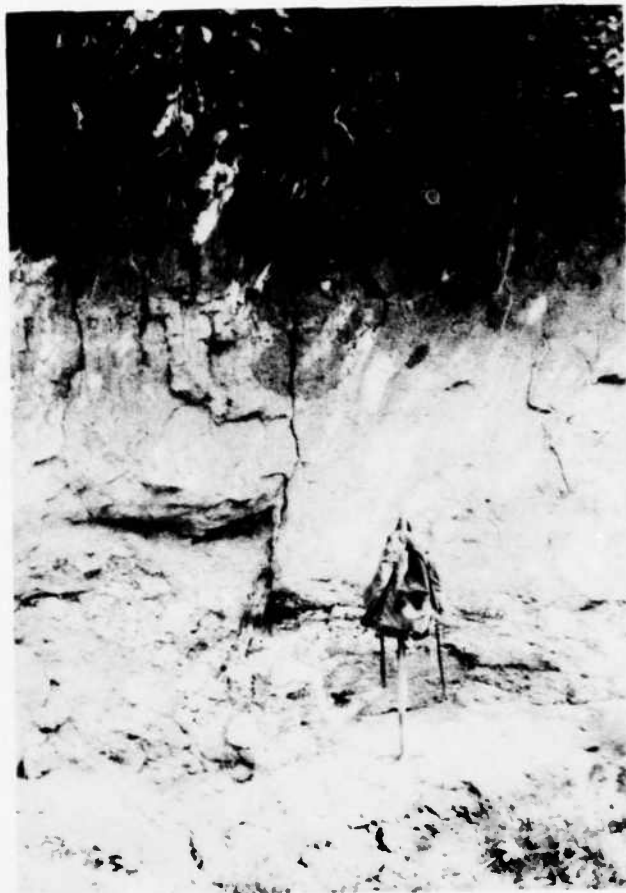


FIGURE 35. Close-up view of 39YK40. Backpack on shovel for scale.

investigators could rappel down the face of the exposure. This would be a cheaper, but less comfortable means of tackling the site.

Whichever option is chosen, two points should be made. First, the apparent cache pit south of the main exposure should be salvaged, if it has not already eroded away. Second, care must be taken that the crew is not surprised by a sudden storm. The arroyo is obviously prone to flash flooding, and it has a very large but very short catchment, resulting in a substantial danger to anyone in it.

39YK201

This site number was assigned by Fenenga (1953) to what appears to be the Gavin's Point site. The order of the legal description was reversed, however, and the site was subsequently assigned site number 39YK203. The latter designation has been used in all publications after Fenenga's and is the preferred designation. The site is discussed below under that number.

39YK202

This site was discovered in 1958, a short distance downstream from Gavin's Point Dam when construction uncovered a human burial at what is now the fish hatchery of the U. S. Fish and Wildlife Service. The burial was salvaged by William Boxy for the River Basin Surveys. Apparently, no formal report was ever written.

The skeleton itself was badly disturbed by construction equipment. Associated with it were shell disk beads and crescent-shaped

pendants, also of shell. No culturally diagnostic material was found, either in association with the burial or in the immediate vicinity.

In 1982, no cultural materials were found in the immediate vicinity of the hatching ponds. A site was found approximately one-half kilometer away, however. This is 39YK39, an Oneota site. While it is possible that the burial was of an individual from this site, it is equally likely that it came from some other site. It is very likely that other sites are located on the terrace north of the fish hatchery, but off of government property.

39YK203 The Gavin's Point Site (see figure 36)

Description

This critically important site was first reported by Fenenga (1953) as 39YK201, but subsequent reports have designated it 39YK203. It is located where a permanent stream enters the Missouri River floodplain. To the west of the site is a prominent bluff, Gavin's Point, which shelters it from westerly and northwesterly winds. The stream flows almost immediately adjacent to the base of the bluff, but an extensive terrace extends to the east.

Previous Investigations

Previous investigations of the site include excavations performed in 1961 by Robert Hall for the Over Museum (Hall 1961, n.d.), a collection made by Lionel Brown (1968), and some limited tests

performed by the University of South Dakota (Zimmerman and Bradley 1978). Of these, Hall's investigations were the most extensive, but the final report has never been published. Hall, however, made a copy of the draft manuscript available to us for use in compiling this report.

Hall created a total of 12 test units at the site: two hand-excavated units west of the creek; five hand-excavated units east of the creek; and five machine-cut trenches east of the creek. In addition, he excavated six cache pits in the mud flat under the normal lake level, not five as given in Zimmerman and Bradley (1978: 11). Zimmerman and Bradley (1978: 12) also err in stating that Hall did not test the western portion of the site; he excavated two units there and noted that one of them yielded the only clear stratigraphic sequence found in 1961.

Hall's field maps indicate that the historic Native American material he collected from the site came from an area of the lakeshore east of the present cove. An area approximately 100 meters long is indicated.

Only three of Hall's excavation units were productive. One of these, Test 3, was located approximately at the eastern edge of the present cove. Approximately 10 by 20 feet in extent, it uncovered one feature--a posthole with a portion of the unrotted post still in it. Cultural material included a gun stock bolt, prehistoric pottery, stone tools, and animal bone. The position of the gun part below the pottery indicated some mixing.

Just offshore from this unit, four cache pits were excavated. Two contained Great Oasis pottery, while the other two did not contain anything diagnostic. Two other cache pits 100 meters to the east and also in the mud flat yielded St. Helena pottery.

Another excavation unit, Test 9, exposed a gully and a cache pit containing Great Oasis material. This was located several hundred feet north of the shore.

The third productive unit was on the west side of the creek and covered approximately 15 by 20 feet. This was excavated to a maximum depth of 54 inches, but the cultural material was in the first 18 inches below the surface. A hint of cultural stratigraphy consisted of a bead like some found in St. Helena sites in the top 6 inches, and a Great Oasis rim below that. This deposit is shallower than that found in 1978 by Zimmerman and Bradley, but it was located further north than their unit and on the edge of the creek.

Hall also noted the presence of pieces of human bone on the dirt road which crosses Gavin's Point proper. These appear to have been disturbed when the road was constructed. No cultural material was found with them that could be used to attribute the burial(s) to any of the components at the site. Re-examination of this spot in 1982 did not yield any further materials.

Zimmerman and Bradley (1978: 12) attribute to Hall the assumption that Great Oasis, Central Plains, and Plains Woodland were chronologically and spatially distinct components at the site. They then go on to suggest that Great Oasis and Plains Woodland may

represent a single occupation of the site. There are several things in error here. First, it is clear from the manuscript (which Zimmerman and Bradley apparently did not have) that Hall not only understood the chronological sequence from Woodland through Great Oasis to the Plains Village complexes, but that he was one of the first Plains archeologists to do so. His manuscript report, which is now out of date in some respects, contains an extended discussion of the cultural chronology of the region in the period, A.D. 200 - 1000. None of the references cited postdate 1964.

Furthermore, there is not a single "Plains Woodland" component at the site but rather two Woodland period components. The earlier of these represents a Middle Woodland Valley phase occupation which Hall estimates to date approximately A.D. 200. It is represented in Hall's collection by 51 rims and 117 body sherds. The second is a Late Late Woodland Loseke Creek phase component represented by 61 rims and a minimum of 89 body sherds. Hall estimates the age of this component in the range, A.D. 700 - 900.

The Great Oasis component produced the most material--192 rims and 243 body sherds. A smaller amount of material, 35 rims and unknown number of body sherds, represent a St. Helena phase component. Two rims and one body sherd are of Oneota derivation. They could represent a separate component or could be part of the St. Helena assemblage; Oneota sherds are present in a number of St. Helena sites.

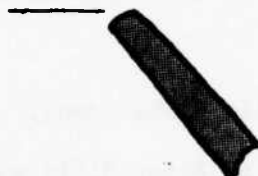
The final component detected by Hall is an historic Native

American component. It is represented by gun parts, metal points, catlinite pipes, trade beads, and a variety of metal objects. Hall (personal communication) suspected that it represented Smutty Bear's village of the pre-reservation period. Our research confirmed this. The village is depicted in this exact location on the Warren Map of 1856.

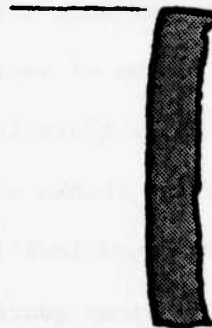
The site saw no more formal work until 1978 when it was tested by Zimmerman and Bradley of the University of South Dakota. They mention that amateurs regularly collect material from the site, however. They excavated three test units east of the creek and a trench and auger holes to the west. Like Hall, they found some evidence for stratified deposits west of the creek but not to the east. Their trench encountered a cultural horizon, up to a meter thick, a basin-shaped pit, and a thick deposit of ash. The latter was not fully investigated. Only a few artifacts were recovered, however.

Collection

- A. Rimsherds: five Great Oasis high rim; one Great Oasis wedge lip; one seed jar rim, apparently of Great Oasis affiliation; one Scalp Punctate; three unidentifiable rims.
- B. Body sherds number 72. Color ranges from buff to dark gray. Temper is predominantly medium crushed rock and thickness ranges from 2.3 mm. to 11 mm.
- C. One corner-notched projectile point, 26.2 mm. long, 20.3 mm. wide,



A



B

FIGURE 36. 39YK203: ABERRANT GREAT OASIS RIMS (ACTUAL SIZE)

A. SEED JAR RIM

B. HIGH RIM

and 4.2 mm. thick. This point is made of a reddish-brown silicified quartzite.

D. One bifacially flaked tool fragment, 24.7 mm. long, 19.3 mm. wide, and 5.7 mm. thick. This tool is manufactured from a reddish-gray chert.

E. One unifacially flaked tool. This is a large (50.8 mm. x 35 mm. x 8.3 mm) flake of Bijou Hills quartzite, with a prepared striking platform.

F. One bifacially retouched flake. This tool is crescent shaped and made of a very fine brown chert with black speckling. It is 39 mm. long, 13 mm. wide, and 6.4 mm. thick at the widest point, the back. Bifacially retouched along the convex edge, this tool was probably used for some cutting function.

G. Twenty-five flakes of various local and non-local cherts, including Bijou Hills quartzite and Knife River chalcedony.

H. Three unmodified chunks of lithic material. One is a low quality red chert found locally, the second is Bijou Hills quartzite, while the third is Sioux quartzite.

I. One small modified piece of red ochre.

J. Two very small fragments of rusted iron.

K. Three unidentifiable bone fragments.

Discussion

This important site has been badly damaged by lakeshore erosion and on-shore development. The sequence represented includes Valley

phase (ca. A.D. 200), Loseke Creek phase (ca. A.D. 700 - 900), Great Oasis (A.D. 900 - 1050), St. Helena (A.D. 1200 - 1400), and historic Yankton (A.D. 1855-1859). Hall's collection also includes a few points which may be Archaic in age. Given the variation in the ceramics assigned to the Loseke Creek phase, it is possible that more than one Late Late Woodland occupation is represented.

Unfortunately, very little has been learned of the nature of any of these occupations. The historic Yankton component is the only exception, and here the evidence is historic rather than archeological. This was Smutty Bear's village in the mid-1850's which contained earthlodges, tipis, and log cabins (Perry Winkle 1858).

A number of atypical Great Oasis sherds have been collected from the site, enough of them in fact to lead us to suspect that this is a very late Great Oasis site or that there were two Great Oasis occupations, one later than the other. Hall (n.d.) mentions a few rims which fall into this category, and we collected two. One is a seed jar rim with an incised turkey track and feather pendant from a pair of incised lines that parallel the rim. Another motif is too fragmentary to determine; all that can be seen is a set of three parallel diagonal lines. Seed jars are not typical of Great Oasis assemblages. Another is a high rim with three bands of decoration rather than the standard two (and Great Oasis is extremely standardized in the arrangement of decorative bands on the vessel rims).

Recommendations

Both Hall (1961) and Zimmerman and Bradley (1978) express the potential of this site in largely negative terms. The reasons they give are the low concentrations of cultural materials encountered in their test excavations and the erosion which severely damaged the site. Hall is more sanguine in his manuscript report, however, noting especially the apparent stratification on the west side of the creek. Elsewhere on the west bank, Zimmerman and Bradley encountered two prehistoric features, a pit and a very large lens of ash below a one-meter thick zone which contained sparse cultural materials.

We believe that Gavin's Point may be eligible for the National Register on two grounds--the archeological potential and its identity as Smutty Bear's village. Taking the latter point first, this is one of a set of Yankton villages in the region that were occupied during the historic period. They include the village on Plum (Emanuel) Creek mentioned by Lewis and Clark in 1806, a village on Choteau Creek, Rain-in-the-Face's village on Choteau Creek of the 1850's, and Strikes-the-Rees village at what is now Yankton, and others. One or both of the villages on Choteau Creek may be represented by a site mentioned by many of our informants, and it is likely that 39B055 represents a Yankton settlement. Four anomalies on an aerial photograph analyzed for a previous project (Ludwickson et al. 1981: Fig. VIII.5) are possible locations for a Yankton village near the mouth of the James River. With appropriate documentation, this set of sites could be offered as a thematic nomination

to the National Register. Appropriate work at Gavin's Point in pursuit of such a nomination should include use of a magnetometer and/or metal detector, both onshore and offshore, to accurately map what may be left of the historic component at the site.

In spite of Hall's (1961) early assessment of the potential of the site and that of Zimmerman and Bradley, we are not convinced that the site, especially the western portion, does not have the potential for yielding important information. Hall's test seems to have been located well upstream from that of Zimmerman and Bradley. Both indicated the presence of stratigraphy, and Zimmerman and Bradley found two clearly identified features. Furthermore, this is the area of the site from which Hall obtained several of the aberrant Great Oasis rims stratigraphically above a normal Great Oasis rim. Since the relationship of Great Oasis to whatever follows it has been identified as a major research problem for the region (Ludwickson et al. 1981: 217-218), further testing of this area of the site is appropriate. This should take the form of two-meter squares spaced along the whole eastern margin of the creek and some deeper coring to determine whether or not there are any deeply buried strata.

Finally, it would be most appropriate to publish the Hall manuscript report. It is somewhat dated (it was written circa 1955), but it contains both critical data and important interpretations. It needs only finished site maps, adequate illustrations of the artifacts and some editing to be useful. To bring it completely

up-to-date would require extensive re-writing, but in its present form it would still be a valuable contribution.

39YK205

This site was discovered by the Gant and Howard survey in 1963. They named it the Hangover site. It lay on the north shore of the lake on a terrace just east of a ravine. Prior to its discovery, the site had been cultivated, and the cultural material was collected from the surface. The artifacts collected were straight rims with cord-roughened exteriors, end scrapers, and small side-notched points. On this basis, Howard and Gant (1966: 11) suggested a Woodland affiliation. If the points belong with the pottery, a Late Late Woodland affiliation is likely. The site is properly marked on Gant and Howard's map, but another site (39YK206) is also labelled 39YK205. The real 39YK205 is the easternmost of the two sites thus marked.

Our survey found that this portion of the shoreline had been landscaped, and the site which was at the surface was probably destroyed. The only sign of any cultural material was a few pieces of water-tumbled animal bone found along the beach. There is no way to demonstrate that this derived from site 39YK205, however. No further work is recommended for this site.

39YK206 The Hearth Site

This site was found by Gant and Howard a short distance west of Gavin's Point. They observed two basin-shaped hearths buried approximately 15 feet below the surface in a cut bank. A chopper and a few flakes were found at the base of the cut bank.

Our survey relocated the site, and the same two hearths could be seen in the cut bank. Field observation indicated that the overburden was closer to 6 than to 15 feet, the latter probably pertains to the total height of the bank. That the hearths were still visible is surprising given the heavy erosion which has occurred along other parts of the shore, including site 39YK209 about one mile to the west. For some unknown reason, the wave cutting which has affected large portions of the shoreline has not eroded this spot since 1963.

At the time of our survey, no cultural remains were to be found on the beach. The cultural affiliation of the site therefore remains unknown. No attempt was made to take samples from the hearths since they were not actively eroding. Since there appears to be no present danger to the site, no immediate work is necessary, but if the lake level were raised, the site would be endangered.

This site can be tested for National Register significance by a small block excavation which encompasses the hearths. No cultural materials are visible in the cut bank, and if few are associated with the hearths, it would be difficult to justify a National Register nomination. Prior to any excavation, the bank face should be cleaned, profiled, and examined by a geomorphologist.

39YK207 The Holiday Site

This site was found by the Gant and Howard survey in 1963. It was located at the mouth of an intermittent stream, upstream from Gavin's Point Dam and very close to the shore of the lake. Both the site survey form and the text of the report (Howard and Gant 1966: 11) are uninformative regarding the size and exact location of the site. The general map of the reservoir that is the end sheet of the report indicates that it lay on both sides of the ravine, however. The text indicates that it was similar to 39YK205 in all respects, but 39YK205 was a surface site, and the text seems to imply that the cultural material from 39YK207 was obtained from cut banks. Furthermore, the legal description given on the site survey form does not agree with the map location. The legal description given in the text is less precise and does not contradict the map location.

The site survey form lists cord-roughened pottery, end scrapers, side scrapers, blade (i.e., biface) fragments, flakes, and fire-cracked rock. The report indicates that the pottery was of Plains Woodland affiliation.

We resurveyed the area where the site had been recorded (on the map), but found no in situ material. The area has been landscaped, with roads and a boat ramp. Furthermore, the shape of the inlet at the mouth of the ravine is quite different from that shown on the Howard and Gant map. Apparently, a good deal of erosion has occurred. Therefore, if the map location is correct and if the cultural material

occurred in the cut banks, the site appears to have eroded away. If it occurred on the ground surface, the road construction and landscaping have probably destroyed it. A scatter of bone and other material observed washed onto the beach for a distance of over a mile east of the site may derive from either of these processes and from this and other sites which used to be located along this portion of the shore.

39YK208 The Dry Creek Site

This site was reported by Howard and Gant (1966: 11), but the amount of information incorporated in the site survey form and report is absolutely minimal. Both of these sources report the legal description only to the nearest section. The text of the report describes the site as "located on both sides of an intermittent stream," but the reservoir map shows no stream. Instead, the map shows 39YK207 as located on both sides of a stream, while the text of the report for 39YK207 does not mention this. It is likely that there was some confusion; Gant found the site in 1963, but Howard wrote the report after 1964. Unfortunately, the site survey form is of no help, as it lacks a site map.

The legal description fits the location indicated on the reservoir map, which places the site on the north shore of the lake between Gavin's Point and the Lesterville Recreation area. There is a ravine in the approximate location indicated by the map, and this area was carefully surveyed in 1982. No indication of a site

was found, but this is not surprising given the evidence for continuing bank erosion in this area. The text of Howard and Gant's report indicates that the site was exposed in the cut bank of the lakeshore in 1963. Only some bison bone and charcoal was noted, however. No such material was observed in 1982, and it is likely that the site has eroded away.

39YK209 The Lesterville Site

This important site was found and reported by Howard and Gant (1966: 11-12). It lies in a terrace at the mouth of an intermittent stream which has cut a deep canyon into the bluffs. The site lies on the left (east) side of this stream at the point where it entered the Missouri River floodplain.

The description of the site by Howard and Gant matches what was observed in 1982 in all particulars except size. They describe it as extending for 1500 feet along the lakeshore and inland for 350 feet. What we observed was far more limited in extent. The site could not be traced inland as far as 100 feet, and it could be seen in the cut bank for about twice as far.

The cultural deposits are stratified, several feet apart. They are exposed high in a 20-foot bluff, and we were not able to measure them accurately. They were observed from the beach and from the bluff top (the latter is a dangerous procedure).

Howard and Gant report collecting cord-roughened Woodland pottery with straight rims, side-notched dart points with concave

bases, end scrapers, and large quantities of broken bison bone. They also reported a human cranium which had eroded from an unspecified spot on a nearby bluff. We observed only bison bone and one stone flake.

Discussion

This important site appears to have been badly eroded since 1963. Either that or Howard and Gant's estimate of the site size was greatly inflated. The site appears to represent a Woodland period habitation and/or hunting camp. Howard and Gant observed the same type of cultural materials in both horizons. This implies that the material near the top of the terrace accumulated quite rapidly. In general, the site appears to be very similar to other deeply buried Woodland camps in the reservoir, with large amounts of broken bison bone.

Recommendations

This site does have the potential for National Register eligibility, but the determination of this depends on how much of the site remains. A small block excavation stepped down near the edge of the cut bank combined with a coring program should suffice to determine how much of the site remains and the nature of its contents.

IX

STUDY AREA RECOMMENDATIONS

Summary of Findings

Table 7 lists the sites in the inventory and indicates something of their potential to contribute to the research questions appropriate to the region. The reader should keep in mind that this information is based on brief site visits that were not intended to test the potential of the sites. Therefore, a blank for a given site under a given research category means that there is no information regarding the potential of the site to contribute to research in that area. It does not mean that the site has no such potential. A testing program is required to determine the potential of each site.

Sites marked with an asterisk include those which we were unable to relocate in 1982, those which are entirely secondary deposits, and those which had been destroyed or very badly damaged prior to 1982.

For two research categories--chronology and paleoecology--we list the methodology that appears to be appropriate to the site, given what was observed during the survey. For three research categories--history, culture history, and human behavior--we list the specific research questions to which the date in the site appears to pertain. Finally, for the category of physical anthropology, we indicate merely whether human skeletal material has been reported from the site.

TABLE 7

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
25KX7	C-14	geomorphology	Late Woodland			
25KX15*	C-14, TL**	geomorphology fauna	Late Woodland		seasonality?	
25KX52	C-14, TL**	geomorphology fauna	Great Oasis			
25KX53		geomorphology			activity area exchange	
25KX55	TL**	fauna			activity area	
25KX56	TL**C-14	geomorphology fauna	Valley Phase		seasonality	
25KX57	TL**C-14	geomorphology fauna palynology?	Great Oasis St. Helena Oneota Historic		seasonality? X	
25KX58	TL**		Woodland			Tepeota? X
25KX59*						
25KX61					activity area?	

*Asterisks mark sites that had been destroyed prior to 1982, were not relocated, or are secondary deposits.

**Thermoluminescent dating.

TABLE 7 (continued)

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
25KX62*						20th century
25KX63	C-14, archeomag.	geomorphology				
25KX64						
25KX65	historic artifacts, C-14					allotment house
25KX67	C-14, TL**	geomorphology fauna	Valley Phase			
25KX68	C-14, historic artifacts	fauna geomorphology?				19th century allotment house
25KX69	C-14	geomorphology fauna				
25KX70	historic artifacts					homestead or later farm
25KX71	TL**	fauna	Woodland?	X	mortuary	farm
25KX200	TL, **C-14, historic artifacts	fauna geomorphology	Woodland Great Oasis St. Helena Historic	X	mortuary exchange	historic Native American village?

*Asterisks mark sites that had been destroyed prior to 1982, were not relocated, or are secondary deposits.
 **Thermoluminescent dating.

TABLE 7 (continued)

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
25KX201*	C-14, TL,** archeomag.	fauna geomorphology	Woodland		seasonality	
25KX202*				X	mortuary	
25KX203	C-14, TL**	tree ring analysis geomorphology, fauna	Great Oasis Archaic? Historic			X
25KX204*	C-14	geomorphology fauna, palynology?	Archaic, Woodland		hunting behavior seasonality	
25KX209*	TL**		Woodland			
25KX210*	TL,*C-14	geomorphology, fauna	Woodland			
39B036						
39B037	C-14, TL** historic materials	geomorphology fauna				Bon Homme Townsite
39B038	TL,*historic artifacts					X

*Asterisks mark sites that had been destroyed prior to 1982, were not relocated, or are secondary deposits.

**Thermoluminescent dating.

TABLE 7 (continued)

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
39B039						power line foundation
39B040	TL**historic artifacts		St. Helena-Mill Creek, or Great Oasis-Mill Creek-Oneota		household organization, community size	midden
39B041	TL**		Woodland, Oneota			possible historic Oneota
39B042						
39B043	historic artifacts					historic farmstead or farm midden
39B044	C-14, TL**	geomorphology fauna			subsistence	
39B045	C-14, TL**, archeomagnetism?	fauna, flora	St. Helena-Mill Creek or Great Oasis-Mill Creek-Oneota		household organization, community size subsistence	
39B046	TL**					

**Thermoluminescent dating

TABLE 7 (continued)

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
39B047	historic materials					material from Hutterite Colony
39B048	Historic materials, legal documents					20th century farmstead
39B039	TL,** C-14	fauna geomorphology	Woodland			
39B051	TL,** C-14	fauna	Archaic?			
39B052	C-14	fauna			subsistence	
39B053	C-14	fauna geomorphology flora			subsistence	
39B054	TL,**					
39B055	historic artifacts					historic Native American?
39B056	TL,** C-14	geomorphology				
39B057	C-14	geomorphology				

**Thermoluminescent dating

TABLE 7 (continued)

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
39B058	C-14	geomorphology	Great Oasis			
39B059	C-14	flora, fauna geomorphology				
39B0201	C-14	geomorphology	Woodland			
39B0202*						
39B0205*						X
39B0206*				X	mortuary	
39B0207*						
39B0208*						
39B0209	TL,*C-14	fauna	Woodland		activity areas	
39YK1*			Woodland	X	mortuary	
39YK37	legal documents					standing structure
39YK38						

*Asterisks mark sites that had been destroyed prior to 1982, were not relocated, or are secondary deposits.

**Thermoluminescent dating

TABLE 7 (continued)

RESEARCH PROBLEMS

SITE	CHRONOLOGY	PALEOECOLOGY	CULTURE HISTORY	PHYSICAL ANTHROPOLOGY	HUMAN BEHAVIOR	HISTORY
39YK39	C-14, TL** historic arti- facts		Oneota		subsistence	
39YK40	C-14, TL** archaeomagne- tism	geomorphology, flora, fauna, palynology	Paleo-Indian? multicomponent		seasonality	
39YK201*						
39YK202*				X	mortuary	
39YK203	C-14, TL, ** historic artifacts	fauna	Valley Focus, Late Woodland Oneota, St. Helena		exchange	Historic Yankton
39YK205*						
39YK206	C-14	geomorphology				
39YK207*			Woodland			
39YK208*						
39YK209	C-14	fauna geomorphology	Woodland	X	mortuary subsistence?	

*Asterisks mark sites that had been destroyed prior to 1982, were not relocated, or are secondary deposits.

**Thermoluminescent dating

Discussion

The set of sites encountered along the shoreline of Lewis and Clark Lake presents a difficult set of scientific and management problems. They are such that the analytical approaches which are often used (and specifically those we used) are of dubious value. Catchment analysis of the sites proved to be of low utility because of the uniformity of site locations imposed by the form of the project. The filling of the lake and the meandering of the river prior to that means that no useful assessment of floodplain resources is possible. Since the Corps land rarely extends far back from the lakeshore, approximately half of the catchment area of every site is this (now featureless) floodplain. Sites are located either in or immediately adjacent to the valleys of smaller streams entering the Missouri River floodplain. There are no surprises here.

Assemblage formation analysis of the small collections made during the survey also provided less information than we had hoped. Nearly all of the lithic materials encountered were not identifiable as to source, making determination of territories used impossible. Analysis of the collections in terms of how permanent each occupation was, proved more useful. These assessments are included in the discussions of individual sites.

The recommendations for individual sites and for the lake as a whole, are based on our recognition of these difficulties. We

suggest an approach that emphasizes analysis of the geomorphic contexts of a subset of the sites encountered. The intent behind this is to create both a management tool and a predictive scientific model. Through analysis of those sites for which erosion has already produced profile walls and which offer samples which can be dated, it should be possible to create a model for the geomorphic context of all of the sites along the lakeshore (and at minimum expense). With such a model in hand, the cultural resource manager should be able to assess the age of sites which have not produced diagnostics, simply from their geomorphic contexts. One scientific benefit of a geomorphic model is the ability to predict site locations in the regions of the Missouri River above and below Lewis and Clark Lake, where wave action has not produced cut banks and thus exposed buried sites.

In addition to the geomorphic study, we have recommended forms of testing appropriate for determination of eligibility for the National Register for some sites. There is no doubt in our minds that the complex of sites along Weigand Creek is eligible as an archeological district. This survey, however, was not designed to collect all of the data necessary to document eligibility.

We have not recommended testing for a fairly large number of the sites found during the survey, and it is appropriate to enter a word of caution about them. A large proportion of the sites found were located in cut banks, from which a minimal amount of cultural material was eroding. This does not necessarily mean that the sites

are inconsequential, only that a minimal amount of material was exposed. This was brought home forcefully when we revisited the Lesterville site, 39YK209. Howard and Gant (1966: 11-12) found an extremely rich Woodland deposit in 1963; in 1982 we found only a few pieces of bison bone. Perhaps the difference means that most of the site has eroded away, or it may simply reflect the variation from year to year in what is visible in a cut bank. Given this latter possibility, there will always be some need for a continuing reassessment of these sites.

The sites found during this survey also offer the potential for some very significant avenues of research. Those interested in the archeology of the region will recognize what these are. We would like to point out in particular, however, the potential of the apparent allotment house, 25KX65, for the first archeological analysis of this important period in American Indian history. There are many Euro-American farmstead sites of the same age in the region with which it could be compared most profitably.

Patterns of Site Location at Lewis and Clark Lake

The original specifications for the analysis of site occurrence information called for the use of site catchment analysis to assess patterns of prehistoric land use. Unfortunately, the strict limits imposed by the U. S. Government property boundaries and the very recent age of virtually the entire lowland zone, made the application of such techniques inappropriate. So little variability remained in the universe of potential site locations that, even when very

small catchment radii were employed, significant differences in between site catchments were statistically impossible.

In consultation with the Corps' contract officer (Brodnicki, September 21, 1982), it was decided that a compilation of selected site location information represented a more realistic and in the end, more useful format for assessing site location variability. In this section of the report, the main trends in site location observed at Lewis and Clark Lake will be presented, followed by a series of simplified model catchments. The section will conclude with a consideration of both the archeological and management implications of these findings.

The site descriptions presented in the Inventory provide a wealth of information concerning site location characteristics at Lewis and Clark Lake. In this section, some of the overall trends observed from these sites will be discussed, along with an assessment of where other sites might lie that could not be discovered by our survey.

These discussions will be limited to a consideration of archeological sites as features in the modern landscape--as contemporary phenomena--and not as the loci of past human behavior or any other non-modern activities. Likewise, and perhaps more importantly, the landscape which is described is also the modern landscape and not a hypothesized ancient or even pre-reservoir environment. Although some consideration will be given to past environments and to past functions or activities at these archeological sites,

our primary concern here is with modern phenomena. This can be justified both on the grounds that our concern is with these sites as existing resources to be studied and preserved, and on the grounds that any more detailed consideration of past site use or environment would require both resources and data far beyond the present Scope of Work.

Several variables relating to both site setting and site discovery were evaluated. The three which appeared most revealing and which will be discussed here were topographic setting, site elevation, and condition of site discovery.

Under the heading of topographic setting (and given the restricted universe of potential site locations already mentioned), an attempt was made to summarize the kinds of settings in which sites were found. The setting types (remembering that these are contemporary settings!) were designed to be sensitive both to the kinds of basic landform and to the presence of small tributary streams to the Missouri in the immediate vicinity of the site. The results from this breakdown are presented in Table 8.

Several conclusions can be drawn from this compilation. The most obvious is that the sites discovered in the Lewis and Clark Lake area are overwhelmingly concentrated along the courses of the tributary streams which cut across the Missouri River Bluffs and empty into the lake. Fully 72% of all known sites are located in such settings. This type of site location would be attractive, both in terms of accessibility to water and in terms of straddling the main

TABLE 8

TOPOGRAPHIC SETTING	NO. OF SITES	PERCENTAGE OF SITES %
floodplain	1	2
low terrace	3	5
low terrace/stream	24	42
high terrace	5	9
high terrace/stream	17	30
upland	<u>7</u>	<u>12</u>
TOTALS	57	100

TABLE 9

SITE DISCOVERY CIRCUMSTANCE	NO. SITES	PERCENTAGE OF SITES %
beach deposits	5	7
cut bank on lake shore	8	12
cut bank along stream	20	29
surface features	9	13
recent human disturbances	9	13
plowed fields	13	19
other surface finds	<u>5</u>	<u>7</u>
TOTALS	69	100

travel routes by which both man and beast could gain access to the Missouri River and the resources of the floodplain. Settings of this type also would be desirable for small-scale horticulture, given the rich and easily worked soils which accumulate in such locations. The low terrace sites which do not follow this pattern may be perceived as being more directly oriented to the utilization of the floodplain, while the higher terrace sites which do not occur in these narrow drainages may share more in common with the remaining upland sites.

The single occurrence of a true floodplain site location must stand in mute testimony to the series of site locations which cannot be discovered due to the presence of Lewis and Clark Lake. The floodplain area, as attested to by ethnohistorical sources, was probably the single most productive zone within the region, both for native agriculture and for hunting and gathering. The only traces of these presumed sites are those low terrace sites already mentioned, the single site (39YK39) located downstream of Gavin's Point Dam which has survived, and the ethnohistorical record.

When considering site loss in this area, the probable nature of the lost sites can, to a certain extent, be circumscribed. Given the seasonal flooding of the Missouri River known from historic times (see section on river channel change), it seems unlikely that a major habitation site of any duration would have been located out on the floodplain. It would seem more likely that they would follow the historic pattern, as seen at the Gavin's Point site (Smuttery

Bear's Camp 39YK203), and locate the main settlement on higher ground but close to the terrace edge. The more likely types of prehistoric sites to be located actually on the floodplain would have been either temporary encampments or special function stations, such as might be associated with agricultural fields. It might be further argued, following O'Shea (1979), that large expanses of horticulturally-productive bottomland would have been critical only during late prehistoric and historic times in this region. If this supposition is true, it would suggest that later horticultural villages would have been most closely tied to the floodplain areas, while earlier adaptations would have been freer to locate their settlements relative to a range of other resources and constraints. This does seem to be the basic pattern which can be observed for the sites in the Lewis and Clark Lake area.

The true upland sites represent a significant proportion (12%) of the total number discovered, despite the problems of limited visibility in uncultivated area upland areas and the narrowness of the U. S. Government property boundaries. The extent to which these sites represent a specialization on Plains interfluvial resources, or made use of river valley resources, can only be determined through future research and excavation.

The second assessment summarizes the way in which the sites in our archeological sample were discovered. This was done by classifying each site in terms of the conditions which led to its discovery or relocation. Table 9 presents these as seven categories,

along with the frequency and percentage associated with each. This list includes all sites listed in the Inventory, including those discovered previous to this survey and not relocated by us. A much finer breakdown of site discovery conditions could have been performed, but it is at this more generalized scale that the basic patterns emerge. From Table 9, it is clear that surface scatters in plowed fields and on slopes reflect only one-third of the sites now known to exist at Lewis and Clark Lake. Exposures due to natural erosional processes yielded the single largest category of site discovery conditions, representing 48% of the sites found. If only stratified or multicomponent sites were considered, this proportion would be much higher. These erosional features took one of two forms: either a) a shoreline erosion, where wave action has exposed cultural materials in the shore deposits, or b) stream-cut features, where permanent or ephemeral stream cutting has exposed cultural deposits in terrace settings. Given the hit-or-miss nature of erosional exposures, this high proportion of finds suggests that considerable erosion is occurring within the project area (with attendant adverse effects on existing archeological resources), and that there is some systematic relationship between the location of these stream drainages and the location of prehistoric sites. Clearly, one runs the risk of circularity in this instance, since the mechanism for site discovery (stream erosion) is closely related to the topographic setting (narrow tributary stream valleys) which appears as a preferred location for sites. We will return to this

question in the final portion of this section. Nonetheless, it should be obvious that just because the survey did not locate sites in a few drainages is no reason to conclude that none are present in those drainages. Given the large number of sites located in this type of setting, we feel that all drainages large enough to have a flat floor contain archeological sites. In a minority of these drainages, erosion has not yet exposed them.

Several other categories in Table 9 also warrant some comment. The relatively small proportion of sites discovered on the basis of surface features (N=9, of which four are historic and two are mound sites which probably lie outside the project domain) should not lead one to conclude that they are a poor indicator of site location in the upland areas of the Missouri River Trench. Indeed, previous research in the same area (see Ludwickson, Blakeslee, and O'Shea 1981) has shown them to be a very good and consistent indicator of site location. In the present instance, the small proportion of sites with such surface features most probably is the result of the particular location of the U. S. Government boundary lines, which severely limited the amount of uplands which could be searched.

The final summary evaluation of site location and discovery was designed primarily as a guide to future site management. The elevation of each site actually relocated by our survey above mean sea level was estimated using USGS 7.5 minute quad sheets. Sites not relocated by us, the elevation of which is then open to

question, are not included. Neither is one site located below the dam. Elevation was seen as both a complement to the assessment of topographic setting (already described), and as a summary guide for the potential damage to sites which would result if the current level of the reservoir were altered. The breakdown of sites by elevation is presented in Table 10. These elevations are approximate (as indeed is the level of Lewis and Clark Lake), yet they serve to highlight the possibly startling fact that some 48% of the sites now known in the vicinity of Lewis and Clark Lake fall within some 5 - 10 feet of the current lake level, and that well over half of the known sites (64%) are no more than some 15 feet above lake level.

TABLE 10

ALTITUDE above mean sea level (feet)	NO. OF SITES	PERCENTAGE OF SITES %
1200-1220	27	48
1220-1240	9	16
1240-1260	10	18
1260-1280	2	4
1280-1300	4	7
1300-1320	2	4
1320-1340	1	2
>1340	1	2
TOTALS	56	101

The second set in this distribution is represented by sites at an approximate elevation of 1240 feet amsl. These sites, and those above this elevation, are sites which are not in imminent danger from fluctuations in lake level, although they could be damaged by erosion and construction activities. The overall distribution of site elevations mirrors the breakdown of site settings which have already been discussed.

Model Catchments (see figures 37,38 and 39)

The detailed reconstruction of individual site catchments in an area as changeable as the Missouri River Trench requires both a precise knowledge of site age, and an accurate and detailed reconstruction of the environment as it was at that time. The amount of change which has occurred in only the last two centuries (see section on river channel change) should stress the difficulty of such a precise reconstruction. Neither of these two preconditions can be met for the present study, yet it seems useful to explore, in at least a preliminary way, the main elements governing site location in the Lewis and Clark Lake area. For the purpose of this preliminary study, three sites were selected: Smutty Bear's Camp (39YK203), the Jazz and Jill site (39YK40), and the sites associated with the terrace complex near the Bon Homme Hutterite Colony (39B036, 59, etc.). For each site, simple circular catchments with a radius of 1.0 and 3.0 km. were imposed on the 1892 Missouri River Commission map (M.R.C. 1894). Clearly, the use of any map for all three sites is arbitrary and inaccurate since the location of the Missouri River,

as well as other resources, has fluctuated through time. Yet, by using this map series as an arbitrary datum environment, an approximate representation of major resource zones can be obtained. The uncertain nature of river location dictates, however, that the entire floodplain area can be treated only as a single environmental unit. The upland areas have been more finely distinguished, although to stratified sites, such as Jazz and Jill, such distinctions are equally arbitrary. Table 11 presents the breakdown of landscape type in the 1 km. and 3 km. catchments for the three sites. First, the simple proportion of upland versus floodplain is presented, followed by a more detailed look at the composition of the upland area.

These catchment summaries begin to suggest the variation in prehistoric land use which probably occurred in the Lewis and Clark Lake area: Jazz and Jill (39YK40), representing an upland setting; the terrace complex sites representing a high terrace location strategy; and Smutty Bear's Camp, a low terrace and floodplain adaptation. The similarity in summary values for floodplain versus upland areas, particularly with a 3 km. catchment, however, emphasizes the small scale of distances needed to exploit any of these resources zones within the site universe examined.

This exercise in catchment analysis is admittedly limited, and is offered as an example of the kind of information which could be recovered if serious environmental reconstruction research were coupled with a program of site testing.

TABLE 11

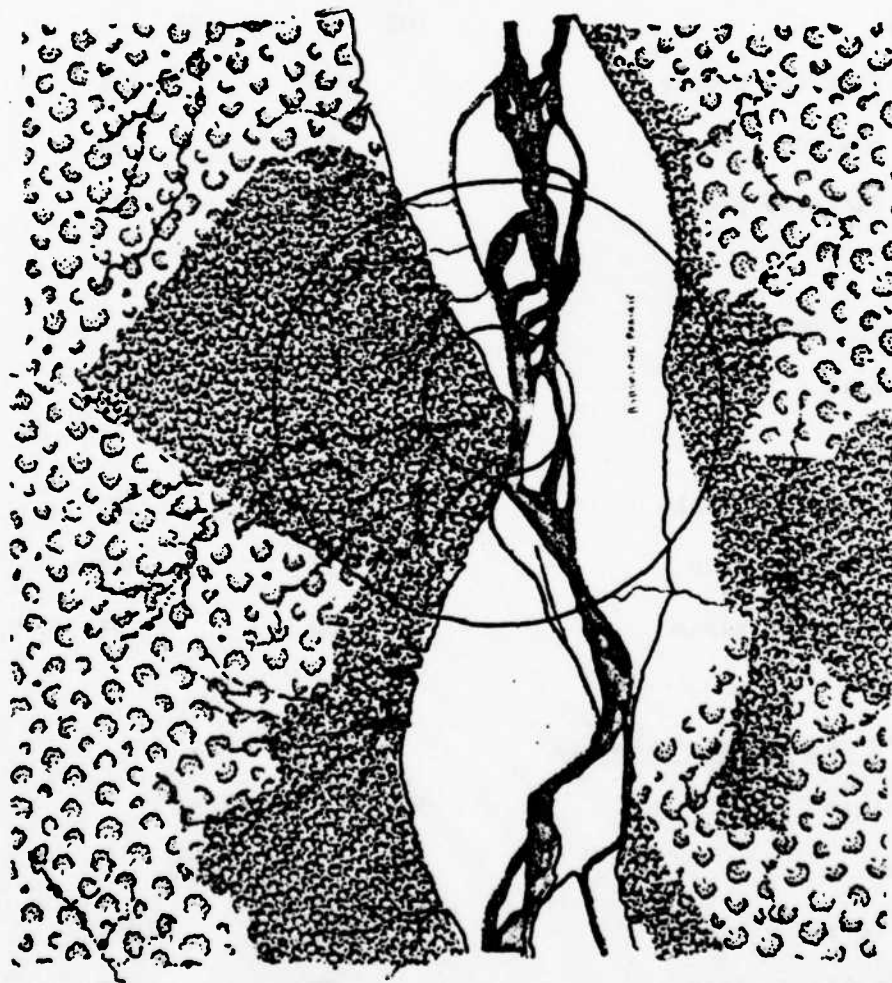
CATCHMENT ANALYSES: PERCENTAGE OF LAND USE

	<u>1 km.</u>	<u>3 km.</u>
<u>Jazz and Jill</u>		
Floodplain	30%	40%
Upland	70%	60%
Forested breaks	98%	68%
Lowland plain	0%	0%
Ridgetop plain	2%	32%
<u>Terrace Sites Complex</u>		
Floodplain	48%	50%
Upland	52%	50%
Forested breaks	37%	33%
Lowland plain	63%	66%
Ridgetop plain	0%	0%
<u>Smutty Bear's Camp (Gavin's Point)</u>		
Floodplain	55%	55%
Upland	45%	45%
Forested breaks	100%	100%
Lowland plain	0%	0%
Ridgetop plain	0%	0%







SMUTTY BEAR'S CAMP

FIGURE 37

CATCHMENT AREAS



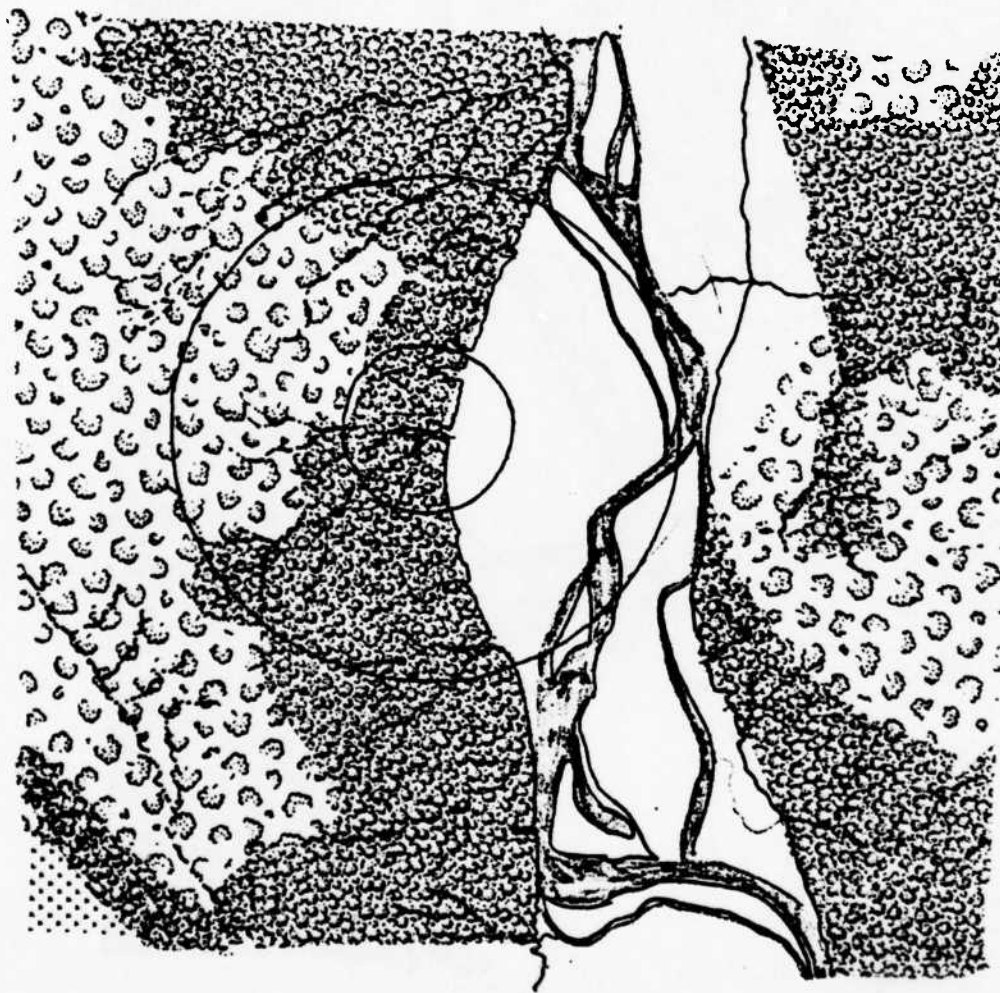
LEGEND

-  Upland Prairie
-  Lowland Prairie
-  Deciduous Forest
-  Alluvial Feature
-  Stream (1892 survey)
-  Stream (extrapolated)

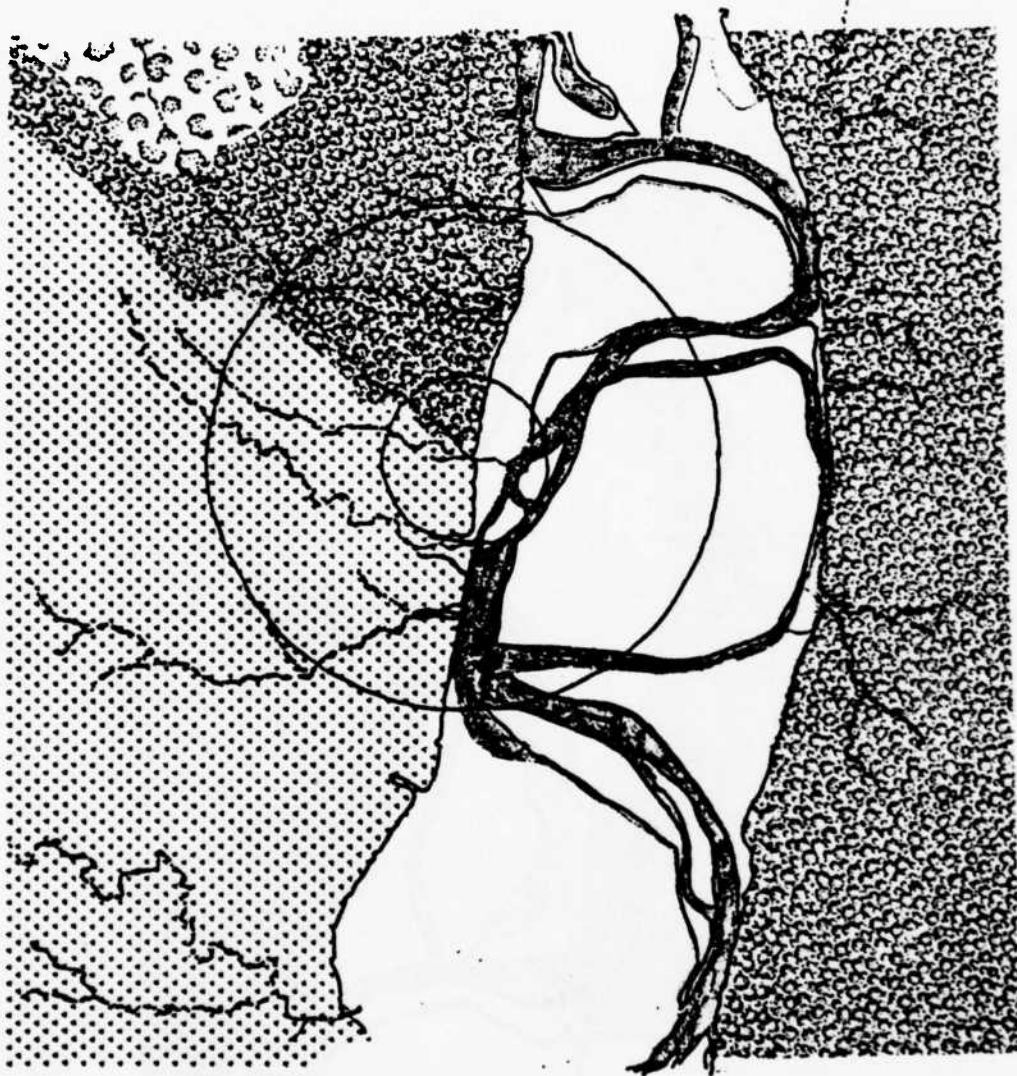
scale



JAZZ AND JILL
FIGURE 38
CATCHMENT AREAS



TERRACE SITES
COMPLEX
FIGURE 39
CATCHMENT AREAS



Sites Not Found

In addition to sites reported by earlier surveyors but not relocated by us, the category of sites mentioned in historical records but not found must be discussed. For the Yankton, there are oral traditions of Rain-in-the-Face's village on Emanuel Creek. This should date to the period just before the establishment of the reservation (mid-19th century). Lewis and Clark also mention a Yankton village on "Plumb Creek," which is presumably Emanuel Creek, in 1806. They did not see it from the river, however. Both sites may have consisted entirely of tipis, and perhaps neither is located on government property.

The original Santee agency at the mouth of Bazile Creek was not observed. This was occupied only for the winter of 1866-1867 and consisted of a few temporary log structures. Presumably, the Santee were camped nearby in tipis.

Ponca sites not located include a series of villages at the mouth of Bazile Creek dating between 1785 and the mid-1850's, a scattering of tipi sites between the mouth of Bazile Creek and Niobrara dating to the 1840's, a village on Lost Creek, and the village of Zabe tie, if it is at Cook's Creek and not the historic component at Cook's Creek. Petroglyphs on the rock bluff opposite Zabe tie and burials on the blufftop near Lost Creek and on the hill slopes adjoining Bazile Creek were also not located.

Some of these failures to relocate sites are readily explained. The chalk bluffs erode readily, and the petroglyphs were gone long

before the lake was flooded. The scattered Ponca tipi sites between Bazile Creek and old Niobrara are under water today. The village at the mouth of the Niobrara and north of the railroad has been washed away. A small amount of lithic material was found at Lost Creek, but a lack of historic artifacts precludes it being identified with a Ponca village. The latter could have been located inland from the lake shore, in which case it is not on government property, or it could have been located on the floodplain, in which case it is under water.

The failure to find anything at the mouth of Bazile Creek is a greater concern. Various documents suggest Ponca settlements of varying sizes here over the better part of a century and the early Santee Agency was located there. Some of these were definitely located away from government property, and most of the burial grounds are probably on the Santee Reservation. Other material may lie under recent alluvium. We noted evidence of recent alluviation in the form of a half-buried Corps boundary marker, and a local farmer told the crew that the area was covered by recent alluvium. Whether it covers any sites older than 1858 is questionable, since the GLO records indicate that the Missouri River flowed against the bluff at that time. The only potential for buried sites would seem to be inside the mouth of the stream as defined by the bluff line.

Management

These findings do provide insight useful for the continued management of archeological resources in the vicinity of Lewis and

Clark Lake. In so far as known resources are concerned, the findings concerning site elevations must surely show that changes in lake level will have a very serious impact on the presently known archeological sites, with as many as 64% of the sites being directly affected by a rise of as little as 15 feet above current lake level. The incidence of site exposures due to erosion also stresses the fact that erosion is a serious and ongoing source of site destruction. These sites cannot be benignly neglected; they are being destroyed. No less than 38% of all known sites in the Lewis and Clark Lake area are undergoing this type of destruction. This represents information which, unless gathered immediately, will be lost forever. Finally, these results also show that, although a thorough sample of sites on government property has been recovered, any true knowledge of human adaptations in the Lewis and Clark Lake area will require further survey in the upland areas beyond this boundary.

These analyses also provide a degree of information concerning sites which were not discovered during the course of field survey. First, it suggests that tributary stream valleys leading into the Missouri River were a preferred location for site location. This tendency was sufficiently strong as to suggest that virtually all such valleys probably contain sites, whether discovered or not. The management implication for this suggestion is that construction or other alterations which affect this type of topographic setting, will have a high probability of encountering cultural remains,

regardless of whether such remains were discovered by this particular survey effort. The second conclusion which can be drawn is that study of site locations upstream and downstream from Lewis and Clark Lake may help to determine the type and age of sites which have been covered or destroyed by the construction of Lewis and Clark Lake.

GLOSSARY

Allotment house: During the subdivision of reservations under the provisions of the Dawes Act, the government sometimes built dwellings on individual allotments in an attempt to entice Native Americans to move out of their traditional villages and onto the allotments.

Alluvium: Sediment deposited by the action of a stream.

Articulate: Of bones, to fit together in correct anatomical position. When bones are found in articulation, it means that they were deposited with enough flesh or at least ligaments still on them that they had not become separated.

Assemblage formation analysis: The analysis of a lithic assemblage which places emphasis on the various processes by which the assemblage accumulated. This is done in order to determine (as far as is possible) how many people were at the site and for how long, the territory they used during their seasonal round, and their pattern of procurement of chippable stone.

Astragalus: A bone of the foot of a quadruped equivalent to the talus in humans.

Band: A subdivision of a tribe consisting of a number of (usually related) families gathered under the leadership of a charismatic chief.

Biface: A chipped stone artifact which has had flakes removed from both faces.

Body sherd: Any sherd from a ceramic vessel which cannot be demonstrated to come from the rim, neck, shoulder, or appendage of a vessel. Most, but not all, such sherds derive from the body of the vessel.

Bundle burial: A form of secondary (defleshed) burial in which the bones are wrapped in some sort of bundle. Articulation between the bones of a bundle burial may be partial or completely lacking. Frequently, some of the bones are missing.

C-14: See radiocarbon

Cache pit: A subterranean storage pit. Cache pits of a variety of types were in use on the Plains since at least Middle Woodland times.

Calcaneus: A bone of the foot. In humans, this is the bone which forms the heel.

Canid: A general term which covers all of the members of the genus Canis, including dogs, coyotes, and wolves. The bones of these animals are usually difficult to distinguish from one another.

Catchment analysis: A method for determining why prehistoric sites are located where they are; that takes into account the resources accessible from the site. In the most common form of such analysis, the resources or landforms found at successively greater distances from each site are measured.

Chalcedony: Any of the various types of cryptocrystalline quartz commonly called agate, chert, flint, jaspers, etc.

Chert: The type of chalcedony which forms by replacement in limestone.

Chopper: A heavy bifacially flaked tool, usually of a coarse-grained material, for use in heavy butchering. Bijou Hills quartzite was commonly used for the manufacture of choppers in this region.

Collared rim: A vessel rim which has been thickened either by folding the rim over on itself or by adding clay to the exterior. In this region, the outer face of the collar is often used as a panel for decoration, and the base of the collar is decorated even more frequently.

Colluvium: Sediment deposited by the action of gravity and erosion on a slope.

Component: A subdivision of an archeological site which represents an occupation of it by the people of a given cultural tradition. A site may contain more than one component.

Cord-impressed: A decorative technique not to be confused with cord-marking. In this technique, a single twisted cord is impressed into the soft clay to produce one or more motifs. Cord-impressed decoration is typical of the Late Woodland period in the project area.

Cord-marking: Cord marks usually on the exterior surface of a vessel are produced by one of two techniques. In Middle Woodland times, a cord-wrapped stick was rolled along the vessel wall in order to draw up the clay and to smooth irregularities in the vessel wall. Infrequently, this was done on the interior as well as the exterior of the wall. Later, beginning in Late Woodland times, the marking was produced by thinning the vessel wall

with a cord-wrapped paddle with the hand or an anvil of some sort held against the interior surface.

Cord-wrapped rod: A mode of ceramic decoration in which a stick or rod wrapped with cordage is pressed into the vessel wall, usually on the lip or upper rim. This technique is typical of the Woodland period in this region.

Core: A piece of stone from which flakes have been struck during the process of manufacture of stone tools. Usually a by-product of the manufacturing process, although tools may be fashioned from the core.

Cretaceous: A geologic period of the Mesozoic Era during which the first flowering plants evolved, from 126 to 65 million years ago.

Dhegiha: A linguistic subdivision of the Siouan language family which includes the languages spoken by the Omaha, Ponca, Osage, Kansa, and Quapaw.

Earthlodge: A type of dwelling built by the horticultural tribes of the northern half of the Plains. It had walls and roof of sod supported by wooden posts. Square and rectangular earthlodges were replaced by circular earthlodges by A.D. 1500.

Epiphysis: The end portion of a longbone. The epiphyses of a bone are separate from the shaft until bone growth has ended. A separate epiphysis is thus indicative of an immature animal.

Ethnohistory: The discipline which attempts to elicit cultural information from such historic documents as maps, travelers' accounts, deeds, and correspondence.

Femur: The single large bone of the upper leg of a human or the upper hind leg of a quadruped.

Flake: A piece of stone purposefully struck from a larger piece.

Flakes may be by-products of the manufacture of tools, in which case they are classified as debitage, or they may be made into tools either without further work (utilized flakes) or with the removal of some smaller flakes (retouched flakes).

Geomorphology: The study of the shapes of landforms and of the processes which produce them.

Habitation: This term is used to differentiate sites of fairly long-term occupation from briefly occupied camps or special purpose sites at which no one lived.

Heat treatment: The process of modifying the flaking qualities of various types of stone by the application of heat in order to produce stone tools more readily. Heat treatment was commonly used in prehistoric times. Heat-treated cherts can be dated by thermoluminescence which allows an estimate of the time elapsed since the stone was heated.

Horticulture: In anthropology, horticulture is distinguished from agriculture as being small-scale gardening using human labor, as opposed to intensive field-oriented agriculture dependent on draft animals or machines. All of the Native American groups in the area which did any crop-raising are classified as horticultural.

Humerus: The single large bone of the upper arm of a human, or the upper foreleg of a quadruped.

In situ: Artifacts found in the spots left by the people who made or used them are in situ. Careful study of in situ materials produces far more information about prehistoric cultures than any study of materials taken out of their context by thoughtless collectors or natural disturbances.

Incising: A mode of applying decoration to the surface of an unfired vessel by cutting it with a sharp tool, producing a track that is deeper than it is wide.

Kinnikinnick: A general term for any red bark or leaf added to native tobacco to create a smoking mixture. The instances of use in this report refer to one or both of two species of dogwood (Cornus amomum and C. stolonifera).

Knife River Chalcedony: A brown translucent chippable stone for which there are extensive quarries in North Dakota. A similar material has recently been found in South Dakota, and material from even more distant sources can be mistaken for it. We follow the regional practice in so labelling all visually similar material in the absence of any developed technique for distinguishing the various sources.

Lodge: A catchall term that is frequently encountered in the ethno-historic literature. It is best translated as "household," since lodges may be tipis, earthlodges, or even log cabins.

Loess: A wind-deposited material derived from glacial outwash sediments. Very thick loess deposits occur in the bluffs in the project area.

Mano: A grinding stone held in the hand or hands for use against a nether stone or metate.

Metacarpal: One of a set of five bones of the human hand or (often of a smaller number) of the forefoot of a quadruped.

Metapodial: A bone from the foot of a quadruped. The term makes no distinction between the forefoot and back foot.

Metate: A slab of abrasive stone which exhibits wear from being ground with a handstone (mano).

Paleosol: Literally, old soil. A buried soil marked by all or part of the regular progression of horizons commonly seen near the ground surface. Study of paleosols can determine something about the environments in which they developed and hence about the environments of any archeological sites they may contain.

Patrilineal: A system of counting descent and inheritance which emphasizes the male line as opposed to the female line or equal emphasis on both.

Phalanx (pl. phalanges): A bone of the finger or toe of an animal.

Photogrammetry: The process of abstracting three dimensional locational information from carefully taken sets of photographs. The USGS quadrangle maps of the project area were made using photogrammetry, resulting in some errors that had a profound effect on the project.

Pick-Sloan Plan: This is the plan for controlling flooding in the Missouri River Basin which led to the construction of Gavin's Point Dam, among others.

Pipestone: One of a variety of red stones used by Native Americans for the manufacture of tobacco pipes. Catlinite is a term for the variety of pipestone found at a quarry in southwestern Minnesota. Plains Indians used a variety of other sources as well, and mineralogical analysis is needed to determine whether a given specimen is catlinite or another pipestone.

Pleistocene: A geologic epoch within the Quaternary Period, from approximately 2.5 million to 10,000 years ago.

Precambrian: The geological era prior to about 600 million years ago, prior to the main development of multicelled organisms.

Prairie turnip: A grassland plant (Psoralea esculenta), the tuberous root of which was used as a food by Plains Indians.

Primary decortication flake: A flake which has been struck from the exterior of a core so that the outer surface of the core (cortex) forms one whole face of the flake. Primary decortication flakes are an indication that manufacture of tools from raw materials took place at a site.

Protohistoric: Used archeologically, this term refers to a Native American site which yields some historic artifacts but for which no historic record has been discovered. Trade goods began filtering into this region early in the 17th century, but historic records do not begin until well into the 18th century, and many 19th century sites lack historic documentation.

Punch and boss decoration: A technique in which a dome-shaped protrusion on one surface of a vessel is made by pushing a stick

or punch nearly through the vessel wall. This technique is found on vessels of Middle Woodland and Early Late Woodland age in the project area.

Radiocarbon: A dating technique based on the radioactive decay of an isotope (C-14) of carbon. This technique can be applied to any organic material. It estimates the amount of time elapsed since the death of the organism.

Scaffold burial: A mortuary practice widespread on the Plains in which the body of the deceased is exposed for a period of time on a platform supported by four posts prior to burial.

Scapula: The bone which forms the shoulder blade of an animal or human. Bison scapulae were frequently used to make hoes by prehistoric Native Americans.

Scoria: A regional term applied to a form of clinker created when beds of lignite burned, bloating and firing the adjacent sediments. This material was used extensively by prehistoric peoples of the region for abrading tools.

Secondary decortication flake: A flake struck from the outer surface of a core following the removal of a prior flake so that one face of the flake exhibits both cortex and a flake scar.

Temper: A non-plastic material added to clay to control shrinkage during drying and firing, and sometimes perhaps for other reasons. The most common temper types in the prehistoric pottery of the project area are crushed granite, sand, and crushed and burned mussel shell.

Terrace: A bench-like landform comprised of alluvial sediments which represents a prior floodplain created by a stream.

Tertiary: The geologic period from 65 to 2.5 million years ago.

Thermoluminescence: A dating technique which measures the amount of energy trapped in crystals by radioactive decay over long periods of time. If the dose rate (radioactivity) is known, the accumulated energy measured in the laboratory becomes a measure of the time elapsed since the last heating (which releases all stored energy). Thermoluminescence has been shown to be effective on pottery and various heated stones.

Tibia: The larger of the two longbones of the lower leg of a human or the lower hind leg of a quadruped.

Till: Unstratified material deposited by a glacier, with components ranging in size from fine clay particles to large boulders.

Tipi: Often spelled teepee in the popular literature. The conical skin tent supported by a framework of poles that was known to all of the Plains tribes.

Trailing: A mode of applying decoration to the surface of an unfired vessel in which a blunt tool is dragged across the surface, producing a track that is wider than it is deep.

Ulna: One of the two bones of the forearm of a human or the lower foreleg of a quadruped.

Vertebral process: Also called spinous process in humans. A portion of the vertebra which projects out dorsally from the spinal column. Large vertebral processes form the hump of the bison.

Whiteware: A general term which covers all of the moderately thin white-surfaced ceramics that are commonly called china, bone china, semi-porcelain, white stoneware.

Woodland: This term is sometimes used to designate a set of cultural traditions and sometimes to designate a time period. In this report, only the former referent is intended.

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